ENVIRONMENTAL ASSESMENT
for
PROPOSED GENERAL PURPOSE WAREHOUSE CONSTRUCTION
at
DEFENSE DISTRIBUTION OFFICE
OKLAHOMA CITY, OKLAHOMA (DDOO)

TINKER AIR FORCE BASE, OKLAHOMA
CONTRACT NO. F41624-03-D-8622
TASK ORDER: 0144

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FINDING OF NO SIGNIFICANT IMPACT

CONSTRUCTION AND OPERATION OF DEFENSE LOGISTICS AGENCY GENERAL PURPOSE WAREHOUSE

TINKER AIR FORCE BASE

Pursuant to the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (40 Code of Federal Regulations [CFR] 1500-1508), Department of Defense Directive 6050.1 and Air Force Regulation 32 CFR Part 989, Tinker AFB has prepared an Environmental Assessment (EA) to identify and assess potential effects of the Defense Logistics Agency (DLA) construction and operation of a new General Purpose Warehouse (GPW) for a Consolidation, Containerization and Palletization (CCP) operation at Defense Distribution Depot Tinker (DDOO), Oklahoma located at Tinker Air Force Base (AFB). This EA is incorporated by reference into this finding.

DESCRIPTION OF THE PROPOSED ACTION: The proposed action consists of the construction of a new 167,575 square-foot GPW by DLA; implementation of CCP operations in the new GPW; construction of new tractor-truck queuing spaces and associated pavement; and a new access road. The new GPW is located on a 14.85-acre parcel that is a combination of asphalt, curbed concrete slab, gravel, and partially improved dirt parking areas.

IDENTIFIED ALTERNATIVES

The initial list of four alternatives was paired down to one viable alternative and a no action alternative by DLA and Tinker AFB. This evaluation was based upon the requirements for CCP support and other parameters including physical security at the CCP site, impact of commercial truck traffic on Main Base Tinker AFB, operational surge capacity of the CCP, DDOO command and control of the CCP, and impact of environmental and construction timelines of CCP implementation. The alternatives addressed in the EA include Alternative A4 (Soil Remediation Site), and the No-Action Alternative. (EA Section 2.2)

DESCRPTION OF THE NO-ACTION ALTERNATIVE

Under the No-Action Alternative, no construction would occur on Tinker AFB related to the DLA operations at DDOO. All existing DLA operations at DDOO would continue. DLA would not be able to implement directions in the BRAC 2005 and achieve workload distribution, reduced redundant inventory, and associated savings. Therefore, the no-action alternative will not be addressed in this EA. (EA Section 2.3)

SUMMARY OF FINDINGS FOR PROPOSED ACTION

Physical Environment: Implementation of the Proposed Action would result in no or minimal impacts on the following physical resources: topography, geology and soils, groundwater, water supply and drinking water. (EA Sections 4.1.1 to 4.1.7)

Air Quality: Construction activities will result in short-term localized emissions from construction vehicles and fugitive dust. These impacts are temporary and are not considered significant. Best Management Practices (BMP) will be implemented to control fugitive dust as required during construction. (EA Section 4.2)

Waste Management and Toxic Materials: The proposed facility operation will add minor amounts of wastewater and solid waste to existing amounts already generated at Tinker AFB and will have no impact. The proposed facility will not handle any additional hazardous materials that are not already handled by DDOO at this time thus there will be no impact from this project. The facility will not be generating any hazardous waste; therefore there will be no impact from this project. Implementation of the Proposed Action would not adversely impact toxic materials or toxic waste or the environment as it relates to materials known as ACM, LBP, PCB, or PCB-containing equipment. (EA Sections 4.3.1 to 4.3.4)

Noise: No significant positive or negative effects to the noise environment are expected to occur with the proposed action since construction activities would be short-term, localized, and significantly distanced from the nearest sensitive receptor elements. Noise from future operations would be generally consistent with noise from the surrounding areas. (EA Section 4.4)

Biological Environment: No endangered, threatened, or sensitive species would be affected by the proposed action. No significant impact to wildlife or habitat would occur with implementation of the proposed action. Only minimal amounts of existing vegetation would be disturber or removed at the site where construction is proposed to occur. (EA Section 4.5.1 to 4.5.3)

Cultural Resources: No archaeological sites are known to occur on or near the proposed action site. No buildings are present on the site that would be eligible for inclusion on the National Register of Historic Places. Consequently, implementation of the proposed action would have not have a positive or negative impact on cultural resources. (EA Section 4.6)

Socioeconomics: Implementation of the proposed action would create an additional economic stimulus to the state and regional economy through new construction expenditures, and increased annual expenditures associated with staffing, operating, and maintaining the proposed GPW facility. There are no residences that might house children in close proximity to the proposed action Area, and no hazardous materials will be generated or stored at the GPW facility. Consequently, implementation of the proposed action should not adversely impact children. (EA Section 4.7)

Transportation and Safety: Implementation of the proposed action is not expected to have a significant adverse impact on traffic patterns or transportation in general. (EA Section 4.8)

Environmental Justice: Implementation of the preferred alternative does not involve any construction or related work outside of the Tinker AFB boundary. No disproportionate or adverse impact to communities or to children outside the Tinker AFB boundaries will occur as a result of the preferred alternative. (EA Section 4.9)

CUMULATIVE IMPACTS: The cumulative impact of implementing this action along with other past, present, and future projects were assessed in the EA and no significant impacts were identified. (EA Section 4.10)

SUMMARY OF PUBLIC COMMENTS: No public comments were received during the public comment period.

DECISION: Based upon my review of the Environmental Assessment attached and incorporated by reference, and contingent upon implementation of specific mitigation measures to be implemented by the 72nd Air Base Wing, I conclude that none of the alternatives nor the Proposed Action will have a significant direct, indirect, or cumulative impact upon the environment. Accordingly, the requirements of the National Environmental Policy Act, regulations promulgated by the President's Council on Environmental Quality, and 32 CFR Part 989 are fulfilled and an Environmental Impact Statement is not required at this time.

Date: 17 Jul 08

MARK A. CORRELL, Colonel, USAF
Installation Commander

Environmental Assessment
for
Proposed General Purpose Warehouse Construction
at
Defense Distribution Center Oklahoma City, Oklahoma (DDOO)

Prepared for

Tinker Air Force Base, Oklahoma
Contract No. F41624-03-D-8622
Task Order: 0144

May 2008

Prepared by

Weston Solutions, Inc.
620 North Robinson Street
Oklahoma City, Oklahoma 73102

EXECUTIVE SUMMARY

The Defense Logistics Agency (DLA) proposes to construct a General Purpose Warehouse facility (GPW) configured for Consolidation, Containerization, and Palletization (CCP) operations at the Defense Distribution Center Oklahoma City, Oklahoma (DDOO), located at Tinker Air Force Base (AFB). Construction of the proposed GPW facility is required to comply with the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended (BRAC 2005). Under BRAC, DDOO operations at Tinker AFB were reorganized to include a new Strategic Distribution Platform (SDP) that would improve Defense Distribution Center (DDC) mobilization, deployment, and sustainment of combatant forces deployed worldwide.

The DLA and Tinker AFB have prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to identify and assess potential effects of the proposed action on the human and natural environment. For purposes of this EA, the proposed action is defined as construction and operation of a 167,575 square foot GPW facility configured for CCP operations and for construction of an access road at Tinker AFB, Oklahoma.

The proposed location for the new GPW facility is a 14.85-acre tract located near Gott Gate in the southwest corner of the installation, approximately 0.3 mile southeast of the intersection of Air Depot Road and SE 59th Street. The proposed site for the GPW facility consists of a 40,000 square foot soil remediation site and of a combination of asphalt, curbed concrete slab, gravel, and dirt parking areas.

The proposed GPW facility would consist of a 165,000 square foot non-combustible, warehouse building with dock levelers, paved roadways, hardstand aprons, and connections to all utilities. CCP operations would occupy approximately 165,000 square feet of the facility. A 1,325 square foot annex would house an administrative area containing office space, employee lunch/break area, restrooms, and locker rooms. A 1,250 square foot utility annex would support all utility functions at the GPW. The proposed access to the site would be via a 1,255 linear foot two-lane reinforced concrete roadway along the general route of the existing gravel access road off of SE 59th Street.

Typical CCP operations involve receiving and breaking down pallets of commodities and creating and shipping new pallets of commodities or receiving and shipping built-up pallets. The GPW would operate 24 hours a day, 7 days a week and require approximately 72 workers per shift. Operation of the CCP would require 110 new employees. Approximately 30 trucks per day are estimated to load or unload at the facility.

Under the No-Action Alternative, no construction would occur at Tinker AFB related to the DLA operations at the Defense Distribution Center Tinker AFB, Oklahoma (DDOO). All DLA operations at DDWG would continue as they do at present. DLA would not be able to implement directions in the BRAC 2005 and achieve workload distribution, reduced redundant inventory, and associated savings.

Four alternative sites for construction of the GPW facility were considered and evaluated by DLA and Tinker AFB. These included Alternative (A1), a site on Main Base, 5th Avenue;

Alternative (A2), a commercially owned warehouse facility located 0.4 mile south of Tinker AFB; Alternative (A3), the Tinker AFB Defense Reutilization and Marketing Service (DRMS) site; and Alternative (A4), a soil remediation site located 0.3 mile southeast of the intersection of Air Depot Road and SE 59th Street. Alternative (A4) was selected as the proposed action alternative based upon the requirements necessary for the facility to be configured for CCP operations.

The predicted impact and cumulative impact associated with implementation of the proposed action are displayed in Table 2-1 of the EA. Positive impact to the surrounding communities would occur both during and after construction. During construction, the local economy would benefit from the purchase of supplies and materials, rental incomes, and purchase of commodities. After the construction period, positive benefits would occur from increased employment and tax base and increased income associated with operation of the GPW facility.

Potential adverse impact associated with implementation of the proposed project was also evaluated and include increased storm water runoff and increased traffic. Increased truck traffic from the operation of GPW equates to approximately two trucks per hour or 30 during any 24-hour period. During normal operations, the total estimated DDOO trucks per month with the GPW would increase from 414 trucks/month (7 percent) to 1314 trucks/month (20 percent). The increases in DDOO-related truck traffic per month at Tinker AFB and cumulative increases in traffic resulting from other identified ongoing actions would not result in significant impact to transportation or safety at Tinker AFB.

The predicted increases in storm water runoff would be controlled and measures implemented through the Storm Water Discharge Permitting system and development and implementation of a Storm Water Management Plan to protect the receiving watershed and downstream wetlands.

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ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing material
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AICUZ	Air Installation Compatible Use Zone
ALOC	air lines of communication
bgs	below ground surface
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CCP	Consolidation, Containerization, and Palletization
CENRAP	Central Regional Air Planning Association
CEQ	Council on Environmental Quality
CFR	*Code of Federal Regulations*
CONUS	Continental United States
CAAA	Clean Air Act Amendments of 1990
DDC	Defense Distribution Center
DDJC	Defense Distribution San Joaquin, California
DDOO	Defense Distribution Oklahoma City, Oklahoma
DDSP	Defense Distribution Susquehanna, Pennsylvania
DDWG	Defense Distribution Warner Robins, Georgia
DLA	Defense Logistics Agency
DoD	U.S. Department of Defense
DRMS	Defense Reutilization and Marketing Service
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EPA	U.S. Environmental Protection Agency
FDP	Forward Distribution Point
FEMA	Federal Emergency Management Agency
FY	fiscal year
gpm	gallons per minute
GPW	General Purpose Warehouse
HAZMAT	hazardous material
HMMP	Hazardous Materials Management Program
HRMA	Housing Requirements and Market Analysis
HWSF	Hazardous Waste Storage Facility

ACRONYMS AND ABBREVIATIONS (CONTINUED)

INRMP	Integrated Natural Resources Management Plan
ISWMP	Integrated Solid Waste Management Plan
IWTP	Industrial Wastewater Treatment Plant
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
MGD	million gallons per day
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NRCS	USDA Natural Resources Conservation Service
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OCAMA	Oklahoma City Air Material Area
ODEQ	Oklahoma Department of Environmental Quality
OSHA	Occupational Safety and Health Administration
pcb	polychlorinated biphenyl
pCi/L	picoCuries per liter
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RPO	Regional Planning Organization
SDP	Strategic Distribution Platform
SHPO	State Historic Preservation Officer
SIP	state implementation plan
TAC	Tinker Aerospace Complex
USAF	U.S. Air Force
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
WRM	War Readiness Materials

CHAPTER 1.0
PURPOSE AND NEED FOR PROPOSED ACTION

1.1 PURPOSE AND NEED FOR PROPOSED ACTION

The National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190) requires all federal agencies to address environmental impacts of any federal action on the natural and human environment. This Environmental Assessment (EA) is being prepared to comply with requirements set forth in NEPA, as implemented by Title 40 of the *Code of Federal Regulations* (CFR) Parts 1500 through 1508, by the U.S. Air Force (USAF) implementing regulations 32 CFR 989, *Environmental Impact Analysis Process*, and by the USAF EIAP Desk Reference, May 1995.

Tinker Air Force Base (Tinker AFB) and the Defense Logistics Agency (DLA) have prepared this EA in accordance with NEPA to identify and assess potential effects of the proposed action and alternative actions associated with the proposed construction of a 165,000 square foot General Purpose Warehouse (GPW) facility at Tinker AFB, Oklahoma, configured for Consolidation, Containerization, and Palletization (CCP) operations.

1.2 PURPOSE OF PROPOSED ACTION

The Defense Distribution Center (DDC) is a combat support agency and the DLA lead center for distribution. The DDC operates 26 sites around the world and is responsible for the receipt, storage, issue, packaging, preservation, and transportation of more than 4-million items. The proposed GPW facility at Tinker AFB is one of two new facilities being constructed in accordance with the Defense Base Closure and Realignment Act of 1990 (BRAC) (Public Law 101-510), as amended (BRAC 2005). As required by BRAC 2005, the DDC would reorganize to create four Strategic Distribution Platforms (SDPs) within the continental United States (CONUS). One of these would be located at Oklahoma City, Oklahoma. Implementation for the DDC means constructing two new SDPs. One would be located at Tinker AFB and the other at Warner Robins AFB; both would be realigning with the two existing SDPs at Defense Distribution San Joaquin, California, and Defense Distribution Susquehanna, Pennsylvania). The additional SDPs at Tinker AFB and Warner Robbins AFB would improve the DDC mobilization, deployment, and sustainment of combatant forces deployed worldwide.

1.3 NEED FOR PROPOSED ACTION

Downsizing the FDPs and relocating general commodities to the four SDPs as required by BRAC 2005 would increase the missions of each of the SDPs. Construction of the proposed GPW facility at Tinker AFB is critical if the DDC is to meet the demands of routine warehousing needs and increased wartime needs for commodities.

Existing DDOO facilities are not configured for CCP operations, which is not conducive for the new mission as a SDP. Global military actions such as the existing war in Iraq have placed

severe strains on meeting demands for materials. These demands have resulted in backlogged requests for commodities and untimely supply efforts. These conditions have created a need for greater efficiencies and reduced delivery times to customers. A GPW facility with the capability to consolidate, containerize, and palletize outbound shipments of commodities and materials would provide the required efficiencies to meet wartime surge demands for commodities. Therefore, in order to comply with BRAC 2005 recommendations and enactment of Public Law 101-510, construction of a GPW facility with CCP capability at Tinker AFB is needed.

CHAPTER 2.0
DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes the proposed action and various alternatives evaluated by the DLA and Tinker AFB relating to the proposed construction of a new, approximately 167,575 square foot GPW facility at Tinker AFB, Oklahoma configured for CCP operations.

2.1 HISTORY OF THE FORMULATION OF ALTERNATIVES

The DDC is a combat support agency and the DLA lead center for distribution. The DDC operates 26 sites around the world and are responsible for the receipt, storage, issue, packing, preservation, and transportation of more than 4-million items. The proposed GPW for construction at Tinker AFB is one of two new facilities being constructed under the U.S. Department of Defense (DoD) BRAC 2005. Per BRAC 2005, DDC will reorganize to create four SDPs within the CONUS. The SDPs will be located at four Defense Distribution Depots: DDSP, DDWG, DDOO, and DDJC. Implementation for the DDC means constructing two new SDPs: One at Tinker AFB to support DDOO operations and the other at Warner Robins AFB supporting DDWG. Both would realign with the two existing SDPs at DDJC and DDSP. The additional SDPs at DDWG and DDOO will improve the DDC mobilization, deployment, and sustainment of combatant forces deployed worldwide. All four SDPs will be equipped with state-of-the-art consolidation, containerization, and palletization capabilities. CCP operations are not storage facilities, but more of a cross dock facility.

As established by the purpose and need in the previous section, the construction of a new CCP is required to comply with the Defense BRAC (Public Law 101-510), as amended (BRAC 2005). Four alternative sites for construction of the GPW were considered and evaluated by DLA and Tinker AFB. Alternative GPW site options included Alternative (A1), a site on Main Base, 5th Avenue; Alternative (A2), a commercially owned warehouse facility located 0.4 mile south of Tinker AFB; Alternative (A3), Tinker AFB Defense Reutilization and Marketing Service (DRMS) site; and Alternative (A4), a soil remediation site located 0.3 mile southeast of the intersection of Air Depot Road and SE 59th Street. The locations of the four alternative sites are shown in Figure 2-1.

Site selection criteria were based primarily upon requirements necessary for the facility to be configured for CCP operations and included the following:

- Compliance with DoD minimum force protection construction standards, as outlined in ***DoD minimum Antiterrorism Standards for Buildings*** (DoD, 2003).

- Ability to provide an approximately167,575 square foot GPW that can provide CCP operations space near existing warehouse space by the year 2011.

- Ability to provide a pre-engineered tilt-up building with a sloped roof that includes the following space characteristics (DLA, 2006b).

    - 165,000 square foot area configured for CCP operations.

- Clear stacking height of 25 feet.
- Small parcel and multi-pack breakdown area.
- Air lines of communication (ALOC) pallet building area with 6 ALOC pits.
- Standard cargo doors equipped with dock levelers and weather seals.
- Receiving (inbound) side with approximately 26 overhead doors, 20 standard cargo doors, a truck well door, and a ramp door.
- Shipping (outbound) side with approximately 24 overhead doors, 20 standard cargo doors, 2 ALOC pallet doors, a truck well door, and a ramp door.
- Stand alone heating system, lighting, receptacles, mechanical ventilation, a high volume fire protection system with alarms, water, intercom, and intrusion detection system with an alarm tied to the base security office/dispatch center.
- 1,325 square foot administrative area with office space, employee lunch/break area, restrooms, and locker rooms.
- 250,000 square foot parking and maneuvering area.
- 80,000 square foot replacement surge storage lot.
- 1,250 square foot utility annex.

2.2 IDENTIFIED ALTERNATIVES

The initial list of alternatives was paired down to one viable alternative and a no action alternative by DLA and Tinker AFB. This evaluation was based upon the requirements for CCP support and other parameters including physical security at the CCP site, impact of commercial truck traffic on Main Base Tinker AFB, operational surge capacity of the CCP, DDOO command and control of the CCP, and impact of environmental and construction timelines of CCP implementation. The alternatives to be addressed in the EA is Alternative A4 (Soil Remediation Site), and the No-Action Alternative.

2.3 DESCRIPTION OF THE NO-ACTION ALTERNATIVE

Under the No-Action Alternative, no construction would occur at Tinker AFB related to the DLA operations at DDOO. All DLA operations at DDOO would continue to operate as they presently do. DLA would not be able to implement directions in the BRAC 2005 and achieve workload distribution, reduced redundant inventory, and associated savings. Therefore, the no-action alternative will not be addressed in this EA.

2.4 DESCRIPTION OF THE PROPOSED ACTION

The components of the proposed action include:

- Construct an approximately 167,575 square foot GPW facility configured for CCP operations at the soil remediation site located on the southern edge of Tinker AFB.
- Operations in the new GPW.

The site selected, Figure 2-2, for the new GPW is located on a14.85-acre parcel that is a combination of asphalt, a 200 by 170 foot curbed concrete slab, gravel, and partially improved dirt parking areas. This location also contains a hardened soil reclamation area that covers approximately 40,000 square feet. Access to the site is along a compacted gravel/dirt road, which is very close to the Tinker AFB truck gate. Location of this site to the truck gate ensures that it is well positioned to support CCP operations. Proposed improvements to the site, required to construct the GPW and support CCP operations, include the following:

- Demolish the concrete slab and soil covering and conduct remediation of any impacted soil, if needed.
- Remove the affected portion of the asphalt parking lot (750 by 300 feet).
- Provide between 2 to 12 feet of fill material.
- Backfill and compact the area of removed concrete and level the site.
- Remove and replace 3,300 linear feet (LF) of 8-foot high security fencing.

- Construct storm water and drainage infrastructure.
- Construct 1,025 LF of retaining wall at a height of 2 to 12 feet along the eastern side of the two-lane concrete access road and CCP site.
- Construct a 1, 225 LF two-lane reinforced concrete roadway along the general route of the current gravel access road.

All of the proposed action requirements delineated in Subsection 2.1 would be incorporated into the new facility at the proposed location. The project includes construction of a 167,575 square foot permanent, non-combustible GPW with a minimum 25-foot clear stack height, weather sealed truck doors; loading/unloading docks with dock levelers; paved roadways; hardstand aprons; and connections to all utilities, as directed by the BRAC 2005. CCP operations would occupy approximately a 165,000 square feet of the facility. An annex would house a 1,325-square foot administrative area with office space, employee lunch/break area, restrooms, and locker rooms and a 1, 250 square foot utility annex to support all utility functions at the facility.

The facility would comply with DoD force protection requirements per unified facilities criteria and incorporate conservation elements to meet Leadership in Energy and Environmental Design (LEED) certification requirements. All electrical, mechanical, and fire protection systems would meet national, state, and local code requirements. The GPW would be constructed with handicap access.

The proposed action does not include any changes to existing DLA operations at Tinker AFB. Material from the existing depot would be transferred by trucks, tugs, and transporters to the GPW for CCP on an as-needed basis.

Construction of the new facility is proposed to begin in fiscal year (FY) 2008 and be completed in FY 2011. The estimated construction cost for alternative A4 is $27.8 million with an estimated annual operating cost of $3.7 million.

2.5 OTHER ACTIONS ANNOUNCED FOR TINKER AFB AND SURROUNDING COMMUNITY

This EA also considers the effects of cumulative impact (40 CFR 1508.7) and connected actions (40 CFR 1508.25(1)) if any are applicable to the proposed or alternative actions. A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impact can result from individually minor but collectively significant actions taking place over a period of time." Other actions announced for Tinker AFB that could occur during the same time period as the proposed or alternative actions include the following:

- **Construct Medical Clinic (FY09):** Construction of a new medical clinic, approximately 172,000 square feet in the open land area northeast of Gott Gate. The new facility will replace the existing clinic. The proposed project will also include a

medical squadron building as well as the War Readiness Materials (WRM) warehouse. The new clinic will house doctor offices, exam and treatment rooms, laboratories, a radiology area, pharmacy, dental clinic, conference and training rooms, as well as storage areas. Energy to operate the new boilers will include a combination of diesel fuel, stored in aboveground storage tank, and natural gas. The existing medical clinic will be demolished (approximately 184,000 square feet).

- **Child Development Center (FY10):** The project involves construction of a new Child Development Center in the southwest portion of the Base, north of SE 59th Street and northwest of Gott Gate in the South Forty Area. Size of the facility would be approximately 32,877 square feet. The proposed action would be located approximately 375 feet west of Air Depot Road and approximately 150 feet north of the Base fence line. Approximately 130 feet of the Urban Greenway Multi-Use trail would be removed and re-routed as a result. The new CDC will provide for the care and training of dependent children of both military and civilian personnel assigned to the Base. The building will contain areas for child activities, staff support, facility support, core administration, and maintenance. A total of 2.1 acres of land will be required to surround the facility.

- **Consolidated Security Forces, South 40 Development (FY10/11):** Construction of a 64,000 square foot facility on the south side of the Base to relocate and consolidate key Security Police Operations. One centralized facility will reduce the response time required to react to various situations.

Concurrent activities of the surrounding community will be identified and added to this section based upon comments received by the Interagency and Intergovernmental Coordination for Environmental Planning correspondence.

2.6 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

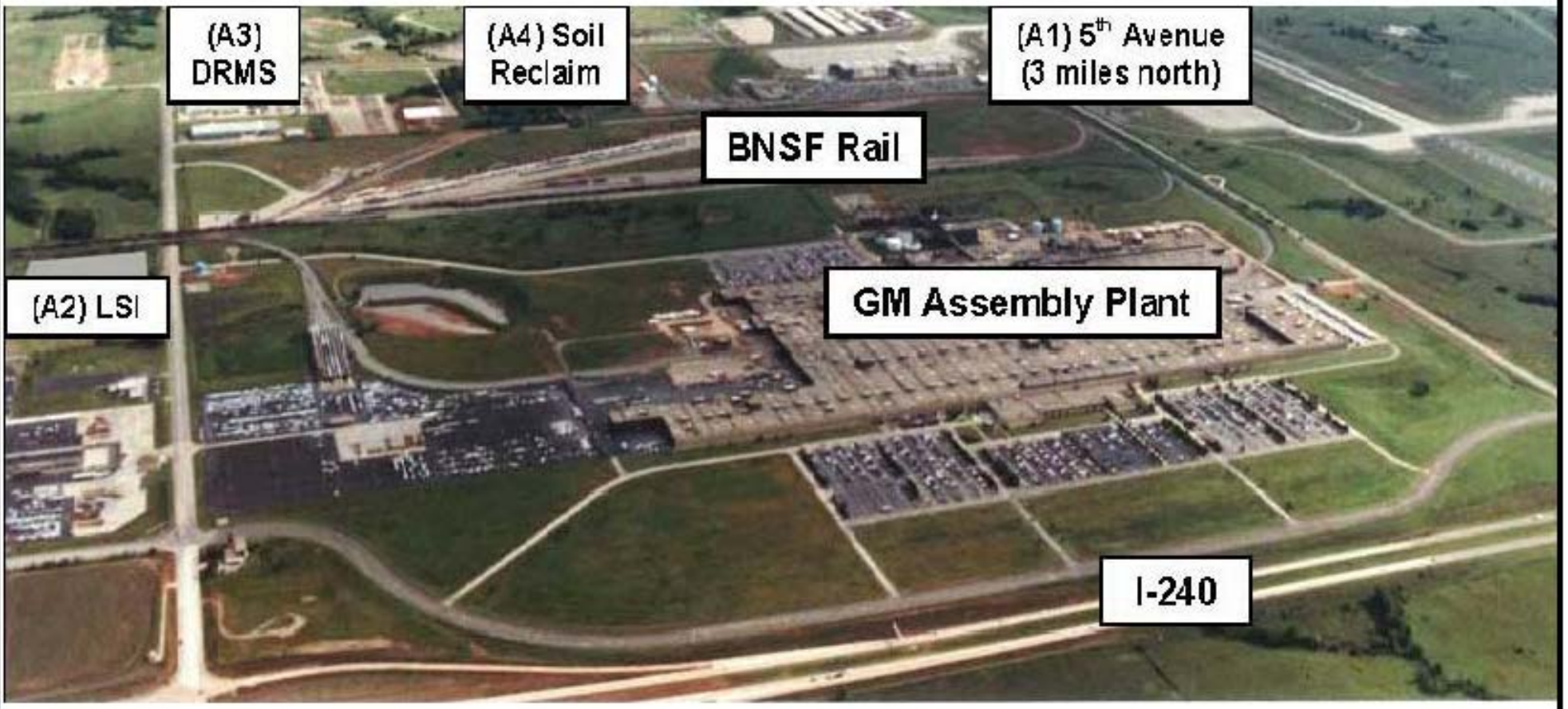
The probable impacts and cumulative impacts of implementing the proposed action are shown in Section of this EA. A summary of the environmental effects of the proposed action are shown in Table 2-1.

2.7 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The preferred alternative is Alternative A4, construction of a GPW at the soil remediation site.

2.8 MITIGATION MEASURES

Proposed mitigation measures to reduce or lessen the probable impact of implementing the proposed action are shown in Table 2-2. Implementation of these measures would result in a no significant adverse impact.



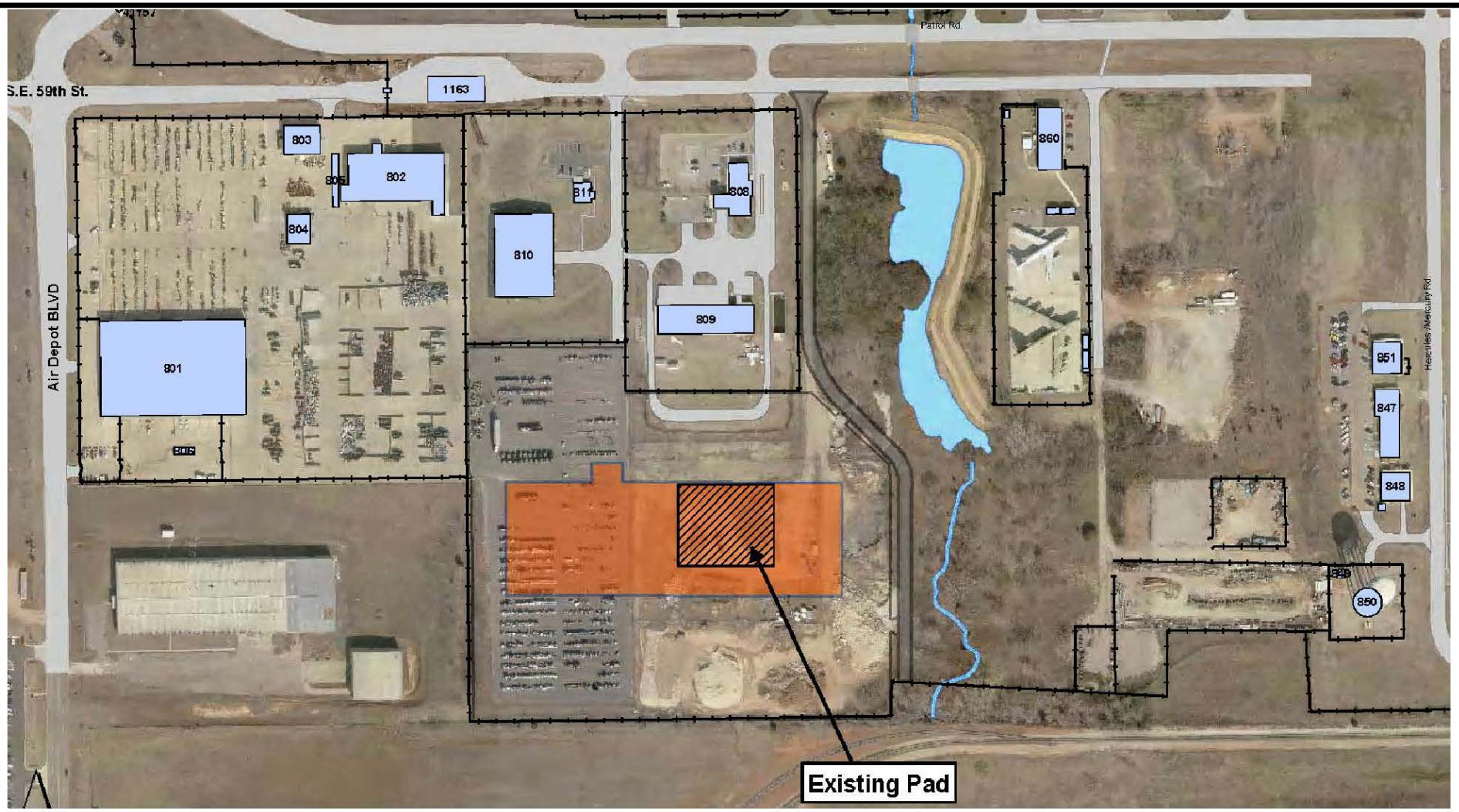
WESTON

FIGURE 2–1
LOCATIONS OF THE FOUR ALTERNATIVE SITES FOR DLA WAREHOUSE

DATE	PROJECT NO.	SCALE
FEB 08	20077043144	NTS

SOURCE: TINKER BUSINESS CASE ANALYSIS, 2007

Path\Name : H:\TINKER AFB (20077.043.144)\FIGURE 2-1.dwg



N

LEGEND

FENCE LINE

0 150 300

SCALE IN FEET

WESTON SOLUTIONS

FIGURE 2–2

PROPOSED CCP OPERATIONS FACILITY

TINKER AFB, OKLAHOMA

DATE	PROJECT NO.	SCALE
MAR 08	20077043144	AS SHOWN

Path\Name : H:\TINKER AFB (20077.043.144)\FIGURE 1-3.dwg

TABLE 2-1

Project Impact Assessment Matrix							
Name of Parameter	**Magnitude of Probable Impact**						
	Increasing Beneficial Impact				**Increasing Adverse Impact**		
	Significant	**Substantial**	**Minor**	**No Appreciable Effect**	**Minor**	**Substantial**	**Significant**
A. Physical Environment							
Flood plains				X			
Geology & Soils				X			
Groundwater				X			
Noise					X		
Surface waters				X			
Topography				X			
B. Socio-Economic Environment							
Employment			X				
Haz, Toxic, & Radiological Waste							
Tax Revenues			X				
Transportation				X			
Traffic Patterns				X			
Regional Growth			X				
Public Health & Safety							
Solid Waste				X			
Water Supply and Drinking Water				X			
Waste water				X			
C. Natural Resource Environment							
Air Quality					X		
Aquatic Habitat				X			
Sensitive Species				X			
Surface Water Quality					X		
Terrestrial Habitat				X			
Threatened & Endangered Species				X			
Wetlands					X		
D. Cultural Resource Environment							
Historic Archaeological Resources				X			
Pre-Historic Archeological Resources				X			

Table 2-2 Summary of Mitigation for Adverse Environmental Impacts

Resource	Mitigation and Best Management Practices
Noise	Short-term impacts from construction. Assure all construction vehicles have suitable exhaust muffler systems. Limit hours of opération for heavy equipment.
Land Use	Assure cumulative development on land resources located in the southwest corner of the facility are in accordance with the Green Infrastructure Plan contained in Appendix I, of the TAFB General Plan.
Air Quality	Short-term impacts from construction. Best Management Practices (BMPs) will be used to control fugitive dust as required during construction.
Surface Water Quality	Obtain SWDP from ODEQ and Implement BMPS' during construction to reduce siltation. Employ silt fences, and silt collection basins. Re-vegetate all disturbed areas in accordance with appropriate TAFB INRMP planting recommendations.
Wetlands & Floodplains	Protect the Beaver Marsh Watershed, Beaver Pond, and FCF mitigation wetland by constructing a flood retention pond to reduce increased rates of storm water runoff. Implement BMP's during construction.
Transportation and Safety	The construction activity will have a temporary and intermittent impact on traffic patterns around se 59th Street, Air Depot and Patrol Road. Standard construction controls will be used during this short duration impact.

CHAPTER 3.0
AFFECTED ENVIRONMENT

This section describes the existing environment within the area potentially affected by the proposed action and No-Action Alternative. It includes a brief description of the location of Tinker AFB and the proposed action site followed by descriptions of the physical environment, biological environment, cultural resources, socioeconomic environment, transportation and safety, air quality, waste management, toxic materials, and noise.

3.1 MISSION

Tinker AFB is headquarters for the 72nd Air Base Wing, and the primary mission for Tinker AFB is to provide responsive installation and support services to Team Tinker. Tinker AFB is located in Oklahoma City, approximately 5 miles southeast of downtown Oklahoma City, Oklahoma (Figure 3-1). Midwest City to the north and Del City to the northwest (Figure 3-2) are incorporated areas immediately surrounding Tinker AFB (U.S. Army 2007).

Tinker Field was established in 1941 as a maintenance and supply depot, and immediately following World War II, expanded to include Douglas Aircraft assembly plant. At this time, Tinker Field was renamed to Oklahoma City Air Material Area (OCAMA). From the 1950s to the 1980s, the OCAMA continued to support additional aircraft and weapons. In 1974, the depot was renamed Oklahoma City Air Logistics Center. In 1991, two Navy E-6 squadrons were added to maintain a flying/communications link between the White House and ballistic missile submarines around the world. Tinker AFB also provided front line support to the forces engaged in Operation Desert Shield and Desert Storm in the early 1990s and in the more recent Operation Enduring Freedom, Operation Iraqi Freedom, and the Global War on Terrorism (US Army 2007).

3.2 PHYSICAL ENVIRONMENT

The section deals with the physical features of the proposed location of the GPW facility and access road. The principal components discussed in this section include topography, surface waters, floodplains, storm water, wetlands, geology and soils, groundwater, and water supply and drinking water.

3.2.1 Topography

Oklahoma City is located in the Interior Lowlands physiographic region and the Central Lowland physiographic province and in the Osage Plan physiographic sub province (USDA NRCS [U.S. Department of Agriculture Natural Resources Conservation Service], 1996). Topography in the area is characterized as gently rolling to nearly level uplands. Elevations in Oklahoma County range from approximately 850 feet National Geodetic Vertical Datum (NGVD) in the southeastern part to about 1,410 feet NGVD in the northwestern corner.

Tinker AFB is situated on a broad, relatively high area of uplands that forms a watershed divide. Elevations on the base range from approximately 1,200 feet NGVD along Crutcho Creek in the

northwest portion of the installation to 1,310 feet NGVD in the southeastern part of the facility (Tinker AFB, 2007). The topography of the proposed GPW site is fairly flat due to previous construction activities associated with building the concrete soil remediation pad and asphalt parking lot. Elevations at the site originally ranged from approximately 1,279 feet NGVD on the southwest corner to about 1,270 feet NGVD on the northeast corner of the site. Slope at the site runs from the southwest to the northeast.

The topography of the proposed access road is fairly flat over most of its length, but it rises sharply near the southern end where it joins the proposed GPW facility site. Elevations run from approximately 1,253 feet NGVD near the access road entrance to approximately 1,270 feet NGVD at the southern end of the road near the northeast corner of the proposed GPW facility site.

3.2.2 Surface Waters

The Tinker AFB surface area is drained by three major drainage basins composed of the Crutcho Creek, Elm Creek, and Hog Creek drainage basins (Tinker, 2005). The primary drainage on the installation is Crutcho Creek, which flows northwest into the North Canadian River. Kuhlman and Soldier Creeks are tributaries to Crutcho Creek. The other two major drainages are Elm Creek and Hog Creek which flow southward into the Little River, which flows into the South Canadian River.

These watersheds are further divided into ten sub-basins (Figure 3-3). Most of the flows in these basins are the result of runoff from storm events. The proposed site for the GPW facility and access road are located along the southern boundary of the Crutcho Creek drainage basin, and within the East Crutcho Creek sub-watershed unit (Tinker, 2007).

There are numerous manmade retention ponds located on the base that were constructed for various purposes including storm water detention, fish and wildlife enhancement, and fishing. No surface water features are located on the site proposed for the construction of the GPW. The nearest surface water features include a series of ponds located to the east of the access road, wetlands located north of the access road across SE 59th Street, and some constructed wetlands located immediately to the east of the site (Figure 3-4). Beaver Pond and Beaver Marsh Filter provide a year round put-and-take warm water fishery, and are managed primarily for largemouth bass. During the winter months Beaver Pond and Redbud Ponds are stocked with rainbow and brown trout and provide a seasonal cold water fishery.

During the site walk, a small stream was noted, which crosses the access road approximately 600 feet south of SE 59th Street. This intermittent stream drains portions of the proposed GPW facility site.

3.2.3 Floodplains and Wetlands

In 1995, the U.S. Fish and Wildlife Service identified 65 acres of wetlands occurring on Tinker AFB using National Wetland Inventory (NWI) criteria. More recently, this figure was revised downward to 38 acres (Tinker, 2007). Of the original 65 acres of NWI wetlands, 7.9 acres were later classified by the U.S. Army Corps of Engineers (USACE) as jurisdictional wetlands under

the Clean Water Act (Tinker, 2007). The U.S. Department of Interior NWI and the Fish and Wildlife Service Wetlands Geodatabase (2007) were searched for the presence of wetlands on the proposed GPW construction site and access road alignment. No wetlands were found to be present on the property (Figure 3-5).

However, adjacent wetlands do exist immediately to the east of the proposed access road. A Category 2 (moderate quality wetland as described by ORAM, Tinker AFB Wetlands Inventory, SAIC, 2008 Draft) wetland exists within the watershed to the east of the proposed location of the GPW facility. The wetland does not qualify as a jurisdictional wetland currently but is on the watch list for doing so in the future. Also, a mitigation wetland project is sited for construction just south of this wetland and bordering the eastern side of the subject property. This mitigation replaces a wetland being removed at the Fuel Control Facility on the east side of Tinker AFB. The wetland construction is estimated to be completed during calendar year 2010.

The Tinker AFB 100-year floodplain covers approximately 413 acres, which have been significantly changed or altered in the past (Tinker, 2007). Most of the floodplain is classified as improved grounds consisting of facilities, roads, ramps, or highly maintained areas such as lawns, athletic fields, and golf course Figure 3-6) (Tinker, 2007). The proposed GPW site and access road are not located within any designated floodplain or floodway area as defined by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for Oklahoma County (FEMA, 2002) and USACE floodplain study (USACE, 2002).

3.2.4 Storm Water

Historical evidence suggests that pre-settlement surface waters on Tinker AFB consisted mostly of streams (Tinker, 2007). The Tinker AFB watershed is composed three distinct drainage systems. The Crutcho Creek drainage is the largest and flows northward into the North Canadian River. It has two major tributaries consisting of Kuhlman Creek and Soldier Creek. Two smaller drainage basins consisting of Elm Creek and West Hog Creek drain small areas on the southeast side of Tinker AFB. These tributaries flow to the south into the Little River and Canadian River watersheds (Tinker, 2007).

Much of the watershed areas have been developed, and streams have been altered, greatly modified, or channelized. These modifications to the natural drainage basins and streams coupled with land use changes associated with base development activities have caused flooding problems during times of major storm events (Tinker, 2007).

Surface water degradation has occurred on Tinker AFB and is considered to be non-point source pollution associated with runoff events (Tinker, 2007). Probable sources include sediment from soil erosion associated with construction/demolition activities; runoff from parking lots; fertilizers and pesticides from lawns, grounds, and golf courses; industrial spills; and deicing compounds from road ways, taxiways, runways, ramp areas, and aircraft (Tinker, 2007). Watershed protection measures have been implemented to protect surface water body beneficial uses in accordance with Title 785 of the *Oklahoma Administrative Code* (Tinker, 2007). As shown in (Figure 3-4), the proposed GPW site is located within the Beaver Marsh Filter Watershed.

Tinker is required by the Oklahoma Department of Environmental Quality (ODEQ) to possess storm water discharge permits. The base has eleven permitted discharge points which are either a National Pollutant Discharge Elimination System (NPDES) permit for source pollution or a construction site permit for all construction sites (Tinker, 2007). The construction contractor will have to develop and have approved a Storm Water Discharge Management Plan prior to any construction activities. The document must specifically identify all requirements as required by the Oklahoma Water Resources Board for the protection of Wetlands. DDOO will have to develop and get approved a Storm Water Discharge Mangement Plan for the operations of the GPW to ensure protection of the Wetlands..

3.2.5 Geology and Soils

Geologically, Oklahoma County is located in the Interior Lowlands physiographic region, the Central Lowland physiographic province, and the Osage Plain physiographic sub province (USDA NRCS, 1996). Tinker AFB is part of a shallow sea that once covered most of western Oklahoma. Consequently, the surficial geology is comprised primarily of sandstone and shale of sedimentary origins formed in the Permian age approximately 250 million years ago. The sandstones range in color from orange-red to reddish-brown and are fine-grained and poorly cemented. The grains are sub-triangular to sub-round and composed of quartz. Shale is reddish-brown and silty.

The Surface Geology Map of Oklahoma County shows Tinker AFB to be dominated by the Garber Sandstone stratum with relatively smaller stratigraphic units of the Hennessy Group, Terrace Deposits and Alluvium (USDA NRCS, 1996). Wood and Burton (1968) reported that the base was almost exclusively underlain with the Hennessey Group (Kingman Siltstone and Fairmont Shale) with one small area underlain with the Garber Sandstone/Wellington Formation and one area with the Alluvium stratigraphic unit. A 1988 USACE report stated the Garber-Wellington Formation underlies the entire base but is overlapped by the Hennessy Group at the southern half of the base (Tinker, 2005)

Five major soil associations occur on Tinker AFB according to USDA NRCS (1996). The soils at the proposed GPW facility and access road are classified as the Renthin-Grainola-Piedmont series (Figure 3-7). They are described as deep or moderately deep, well drained, clayey soils on prairie uplands. Thirty-four soil types (Figure 3-8) occur within the base boundaries (USDA NRCS, 1996). Most of the soils at the proposed GPW facility site are classified as Renthin silty clay loam soils (RnnC2). A very small portion of the site may be classified as Norge silt loam (NorC) soils.

These soils are suited for production of crops, hay, pasture, rangeland, and urban development. Neither of these two soils are classified as “Prime or Unique Farmlands,” as defined by the USDA. There are management concerns for developing on these soils since they exhibit a high shrink-swell potential, very slow permeability, depth to bedrock, high corrosivity, and hazard of erosion (USDA NRCS, 1996). The soils on and around the proposed GPW site have been greatly disturbed from their original context due to construction activities associated with the soil remediation pad and asphalt parking lot. To what extent they represent the original soil mapping units is unknown.

3.2.6 Groundwater

Oklahoma County has an abundant supply of good quality groundwater that is found in the Quaternary alluvial and terrace deposits and in the Garber-Wellington aquifer, which underlies all parts of the county (USDA NRCS, 1996). The Tinker AFB *Integrated Natural Resources Management Plan* (INRMP) (2007) provides the following discussion on ground water:

> "The primary groundwater zones at Tinker AFB include the Hennessey Water Bearing Zone, the Upper Saturated Zone (formerly the 'Perched' Zone) the Lower Saturated Zone (formerly the 'Top of Regional' and 'Regional' aquifers, and the Producing Zone. Tinker AFB is located in a recharge area for these water-bearing zones; groundwater is derived primarily from precipitation and from infiltration of surface streams. The Upper Saturated Zone through the Producing Zone form part of the Central Oklahoma Aquifer, which underlies about 3,000 square miles of central Oklahoma. These zones are made up primarily of two geologic formations, the Garber Sandstone and the Wellington Formation, which provide most of the water to water supply wells at Tinker AFB and the surrounding communities. Because of the prolific nature of these water-bearing units, the aquifer is often referred to as the Garber-Welling Aquifer; the Hennessey Water Bearing Zone overlies this aquifer in the southwest portion of the base but is not part of the Garber-Wellington Aquifer
>
> Groundwater at Tinker is found under either water table or confined conditions. The depth to water ranges from a few feet to about 70 feet depending on the local topography. Across Tinker, water can sometimes be found in shallow, thin, discontinuous perched zones located above the aquifer. Most water from the Garber-Wellington Aquifer is of sufficient quality to be used for most industrial, agricultural, and domestic purposes. However, some contaminated groundwater plumes do exist typically at a depth of 175 feet or shallower. These plumes are primarily a result of aircraft maintenance and overhaul operations that occurred between the mid-1940s and mid-to-late 1970s.
>
> The approximate direction of groundwater flow in the Garber-Wellington Aquifer is south and southwest across the southern one-half of the base and west to northwest across the northern one-half. Shallow groundwater may discharge to surface streams (gaining stream) or be recharged by streams (losing stream). Both situations occur at Tinker along Crutcho Creek and Soldier Creek. In contrast, water in the Hennessey Water Bearing Zone generally flows to the northeast toward Crutcho Creek from higher topographic areas along the south boundary of the base."

It is not uncommon for water wells located in the Garber-Wellington aquifer to yield 150 to 400 gallons per minute (gpm), while water wells located in alluvial and terrace deposits may only yield 25 to 300 gpm (USDA NRCS, 1996). The aquifer is recharged by precipitation and runoff through the soils and porous sandstones of the Garber Wellington Formations.

3.2.7 Water Supply and Drinking Waters

Tinker AFB utilizes a system of water wells for their primary water supply source. The well field consists of 22 operational wells located in the Northside Industrial District and Eastside

Depot Maintenance District (Tinker, 2005). The wells range in depth from 380 to 706 feet and yield 205 to 250 gpm. The source aquifer for the wells is the Garber-Wellington Aquifer, which is a component of the Central Oklahoma Aquifer. The Tinker AFB water supply and distribution system currently operate at about 75 percent capacity. At this capacity, the wells yield approximately 6.5 million gallons per day. The annual usage of base-produced potable water is approximately 881,000,000 gallons, an additional 24,452,000 gallons are purchased from local communities. The overall general condition of the system is considered good (Tinker, 2005).

The City of Oklahoma City provides a secondary source of water at metered connections located in the Eastside Depot Maintenance District and at the South Forty District. These connection points provide an additional 6,400 gpm of water to the Base (Tinker, 2005).

Drinking water purification is by chlorination and fluoridation. Seventeen of the water wells are equipped with chlorination systems at the well site. The other five wells feed to a central chlorination station in Building 774. Fluoride is added to drinking water supplied to the family housing area at Buildings 6620 and 8000. The water purchased from Oklahoma City is both chlorinated and fluoridated (Tinker, 2005).

Utility privatization is the transfer of ownership of the utility system to a public or private sector. In accordance with the *Air Force Utilities Privatization Policy and Guidance Manual* (October 1998), the water supply and distribution systems are being considered for privatization. Privatization would not include the military housing water distribution system that is part of a separate Housing Privatization Initiative, deluge systems, interior fire suppression systems, water sprinklers, irrigation systems, and non-potable water systems that could be severed from the Base water system (Tinker, 2005).

Water distribution lines presently serve Buildings 808, 809, and 810, which are adjacent to the proposed GPW facility. A water tower is located at Building 850, which is east of the proposed GPW facility. Fire protection lines are located to the northeast and east of the proposed GPW site along Air Depot Road.

3.2.8 Wastewater

Sanitary wastewater from the base discharges to the Oklahoma City sanitary sewage system and, ultimately, to the Oklahoma City publicly-owned treatment works. Industrial wastewater on the east side of the base is pretreated at the Industrial Wastewater Treatment Plant (IWTP) prior to discharge into the Oklahoma City sanitary sewer system. Tinker AFB's industrial wastewater is regulated under its industrial discharge permit with the City of Oklahoma City Water and Wastewater Utilities Department.

Storm water runoff is collected and discharged into East and West Solier, Crutcho, and Kuhlman creeks and discharged ultimately to the North Canadian River. These creeks are equipped with spill gates to control major spills and to limit migration of these spills off-Base. These storm water discharges are regulated under multiple Oklahoma discharge permits (Draft External EOHCAMP, 2007).

3.2.9 Solid Waste

The Solid Waste Management Program at Tinker AFB handles recycling, collection, storage, and disposal of household refuse from military housing, and all non-hazardous, non-liquid shop and administrative wastes, construction debris, landscaping debris, incinerator ash, and sanitary sludge.

Waste would be generated on a long-term basis from operation of the proposed GPW. The solid waste would include office waste, paper, plastics, metal and glass containers, and standard housekeeping materials. The waste would be generated by the additional 100 new employees. Office waste will be recycled to the extent possible and would not cause significant environmental issues.

3.2.10 Hazardous Materials and Waste

In the performance of its mission, Tinker AFB consumes a large amount of environmentally hazardous materials (HAZMAT). Tinker AFB operates a Hazardous Materials Management Program (HMMP) to manage the procurement and use (and eventually the disposal) of hazardous materials. The HMMP functions through the use of a decentralized HAZMAT Cell and many Hazardous Materials Issue Points. The pharmacy concept ensures that the proper amount of hazardous materials is issued for control and use. The Issue Points do this by using a hazardous materials electronic tracking system (HMMS) to ensure materials are issued only to authorized users, in authorized zones, and for authorized tasks (Draft External EOHCAMP, 2007).

Tinker AFB is a large-quantity hazardous waste generator. Waste management procedures are set out in OC-ALC-Tinker AFB Instruction 32-7004 (15 August 2001). Tinker AFB also holds a Part B permit for its Hazardous Waste Storage Facility (HWSF) issued by the ODEQ (effective date July 2001). The permittee may store a total volume of 159,390 gallons of waste. Tinker AFB generated approximately 1,806 tons of hazardous waste in 2005 and 1,616 tons of hazardous waste in 2006. The HWSF is used for storage; no treatment or disposal takes place on Tinker AFB (Draft External EOHCAMP, 2007).

3.2.11 Toxic Materials

Radon: Radon gas has been identified at Tinker AFB. Base assessments of Radon levels have indicated values well below the EPA action level of 4 picoCuries per liter (pCi/L).

Asbestos: Asbestos-containing materials (ACMs) have been used throughout Tinker AFB to increase the fire resistance of buildings materials and for thermal installation. The Asbestos Operating Plan and Asbestos Management Plan define base policies and procedures for accomplishing asbestos-related projects and ensure compliance with federal and state regulations.

Lead-Based Paint: In 1978, DoD banned the use of lead-based paint (LBP) in all of its facilities. LBP was used extensively, however, at most facilities constructed before 1978.

Buildings at Tinker AFB that were constructed before 1978 may have one or more coatings of LBP.

3.3 AIR QUALITY

3.3.1 Air Quality Standards and Regulations

The U.S. Environmental Protection Agency (EPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) under the Clean Air Act Amendments of 1990 (CAAA). The CAAA also set emission limits for certain air pollutants from specific sources, set new source performance standards based on best demonstrated control technologies, and established national emission standards for hazardous air pollutants.

The CAAA specifies two sets of standards, primary and secondary, for each regulated air pollutant. Primary standards define levels of air quality necessary to protect public health, including the health of sensitive populations such as people with asthma, children, and the elderly. Secondary standards define levels of air quality necessary to protect against decreased visibility and damage to animals, crops, vegetation, and buildings. Federal air quality standards are currently established for six pollutants (known as criteria pollutants), including carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur oxides (SO_x, commonly measured as sulfur dioxide SO_2), lead, particulate matter equal to or less than 10 micrometers in aerodynamic diameter (PM_{10}), and particulate matter equal to or less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$). Although O_3 is considered a criteria pollutant and is measurable in the atmosphere, it is often not considered as a pollutant when reporting emissions from specific sources, because O_3 is not typically emitted directly from most emissions sources. Ozone is formed in the atmosphere from its precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that are directly emitted from various sources. Thus, emissions of NO_x and VOCs are commonly reported instead of O_3.

The NAAQS for the six criteria pollutants are shown in Table 3-1. Units of measure for the standards shown in this table are micrograms per cubic meter of air ($\mu g/m^3$), except for ozone, which is in parts per million (ppm).

The EPA classifies the air quality within an Air Quality Control Region (AQCR) according to whether the region meets federal primary and secondary air quality standards. An AQCR or portion of an AQCR may be classified as attainment, non-attainment, or unclassified with regard to the air quality standards for each of the criteria pollutants. "Attainment" describes a condition in which standards for one or more of the six pollutants are being met in an area. The area is considered an attainment area for only those criteria pollutants for which the NAAQS are being met. "Non-attainment" describes a condition in which standards for one or more of the six pollutants are not being met in an area. "Unclassified" indicates that air quality in the area cannot be classified and the area is treated as attainment. An area may have all three classifications for different criteria pollutants.

Table 3-1
National Ambient Air Quality Standards

Pollutant	Standard Value ($\mu g/m^3$)[a]	Standard Type
CO		
1-hr average	40,000	Primary
8-hr average	10,000	Primary
NO_2		
Annual average	100	Primary and secondary
O_3		
1-hr average[b]	0.12	Primary and secondary
8-hr average[c]	0.08	Primary
Lead		
Quarterly average	1.5	Primary
PM_{10}		
24-hr average[d]	150	Primary and secondary
$PM_{2.5}$		
24-hr average[e]	35	Primary
Annual average[f]	15	Primary
SO_2		
3-hr average	1,300	Secondary
24-hr average	365	Primary
Annual average	80	Primary

Notes:
CO = carbon monoxide $\mu g/m^3$ = micrograms per cubic meter NO_2 = nitrogen dioxide
O_3 = ozone $PM_{2.5}$ =particulate matter equal or less than 2.5 micrometers in diameter
PM_{10} = particulate matter equal or less than 10 micrometers in diameter SO_2 = sulfur dioxide
[a] Units for ozone are ppm.
[b] The 1-hour ozone standard, as well as designations and classifications for all 1-hour ozone non-attainment and maintenance areas, have been revoked except for the Greensboro, NC; Nashville, TN; and Denver, CO maintenance areas.
[c] To attain the 8-hour ozone standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
[d] The 24-hour standard for PM_{10} is not be exceeded more than once per year
[e] The $PM_{2.5}$ 24-hour standard is based on the 3-year average 98th percentile of 24-hour concentrations at each population-oriented monitor, must not exceed 35 $\mu g/m^3$.
[f] The $PM_{2.5}$ annual standard is based on 3-year average of weighted annual arithmetic mean concentrations, must not exceed 15 $\mu g/m^3$.

The CAAA requires federal actions to conform to any applicable state implementation plan (SIP). EPA has promulgated regulations implementing this requirement (EPA 2003a and EPA 2003b). A SIP must be developed to achieve the NAAQS in non-attainment areas (i.e., areas not currently attaining the NAAQS for any pollutant) or to maintain attainment of the NAAQS in maintenance areas (i.e., areas that were non-attainment areas but are currently attaining NAAQS). General conformity refers to federal actions other than those conducted according to specified transportation plans (which are subject to the Transportation Conformity Rule). Therefore, the General Conformity rule applies only to non-transportation actions in non-attainment or maintenance areas. Such actions must perform a determination of conformity with the SIP if the emissions resulting from the action exceed applicability thresholds specified for each pollutant and classification of non-attainment. Both direct emissions from the action itself and indirect emissions that may occur at a different time or place but are an anticipated consequence of the action and must be considered. The Transportation Conformity Rule does not apply to this project.

The applicability thresholds are 100 tons per year (tpy) for criteria pollutants, except for those shown in Table 3-2.

Table 3-2
General Conformity Applicability Thresholds

NAAQS Pollutant	Type of Non-attainment or Maintenance Area	Applicability Threshold (tpy)
Ozone	Extreme NAAs	10 tpy VOC or NO_x
	Severe NAAs	25 tpy VOC or NO_x
	Serious NAAs	50 tpy VOC or NO_x
	Marginal or moderate NAAs inside an ozone transport region	50 tpy VOC (100 tpy NO_x)
	Maintenance areas inside an ozone transport region	50 tpy VOC (100 tpy NO_x)
Carbon Monoxide	All NAAs	100 tpy
Sulfur Dioxide	All	100 tpy
PM_{10}	Serious NAAs	70 tpy PM_{10}
	Moderate NAAs	100 tpy PM_{10}
	All Maintenance areas	100 tpy
Lead	All NAAs	25 tpy Pb
	All Maintenance areas	25 tpy Pb

Notes:
NAA = Non-attainment area NAAQS = National Ambient Air Quality Standard
NO_x = nitrogen oxide Pb = lead
PM_{10} = particulate matter equal or less than 10 micrometers in diameter.
tpy = tons per year VOC = volatile organic compound

A number of actions are exempted from the requirements of general conformity, including the following:

- Actions that do not have emissions increases.
- Actions with an emissions increase that is clearly de minimis (21 actions are listed; primarily actions that are administrative, legal, or routine in nature including routine movement of mobile assets, material, and personnel as well as routine maintenance and repair).
- Actions that are not reasonably foreseeable or that respond to natural disasters or emergencies. Actions that have been approved under specified federal programs.
- The federal agency must demonstrate and document that the direct and indirect emissions would conform to the SIP if an action triggers the applicability thresholds and is not exempt from the requirements. In particular, it must be demonstrated that the proposed action will not:
  - Cause or contribute to a new violation of an NAAQS.
  - Interfere with the SIP.
  - Increase the frequency or severity of existing violations.

- Delay attainment or any required progress toward that attainment.

The determination generally involves emission estimation and sometimes air quality modeling for the entire non-attainment or maintenance area (usually a multi-county area). If the initial conformity determination demonstrates that the proposed action does not conform to the SIP, measures must be established and committed to mitigate the projected air quality impact. A timeline for implementation of these measures may be specified; however, enforcement measures must also be established to ensure that they are implemented as required.

Air quality management at Air Force installations is established in AFI 32-7040, Air Quality Compliance. AFI 32-7040 requires installations to achieve and maintain compliance with all applicable federal, state, and local standards. Air quality compliance involves prevention, control, abatement, documentation, and reporting of air pollution from stationary sources and mobile sources if located in non-attainment areas. Maintaining compliance with air quality regulations may require reduction or elimination of pollutant emissions from existing sources and control of new pollution sources.

3.3.2 Regional Air Quality

Tinker AFB lies entirely within the boundaries of Oklahoma County, located in the central portion of Oklahoma. The main portion of Tinker AFB is located within the city limits of Oklahoma City, which is located in the southwest portion of the county. The base is centered 10 miles southeast of downtown Oklahoma City. Incorporated areas immediately surrounding the Base include Midwest City to the north and Del City to the northwest.

Oklahoma County is part of the Central Great Plains in the western parts of the county and transitions to the crosstimbers region in the eastern parts of the county. The climate of Oklahoma is continental, as is all of the Great Plains. Warm, moist air moving northward from the Gulf of Mexico often exerts much influence, particularly over the southern and eastern portions of the state, where humidity, cloudiness, and precipitation are resultantly greater than in western and northern sections. Summers are long and usually quite hot. Winters are shorter and less rigorous than those of the more northern Plains states. Periods of extreme cold are infrequent, and those lasting more than a few days are rare.

The average annual mean temperature for Tinker AFB is 61 degrees Fahrenheit (°F). Temperatures range from an average daytime high of 93 °F in July to an average low of 26 °F in January. The average temperature during the summer months (June, July, and August) is 80°F, with record extremes of 47°F and 110°F. The average temperature during the winter months (December, January, and February) is 40°F, with record extremes of -8°F and 92°F. Tinker AFB averages 75 days per year with temperatures above 90°F. Temperatures below 20°F occur an average of 22 days per year.

Relative humidity, on average, ranges from 41 percent to 92 percent during the day. During the year, humidity is highest in May and lowest in February through April. Winter months tend to be cloudier than summer months. Average annual precipitation in Oklahoma County is 36 inches. October and June are the wettest months, on average, but much of the spring through fall

receives sufficient rainfall. The average precipitation during summer months (June, July, and August) is 3.4 inches per month (or for all 3 months). The average precipitation during winter months (December, January, and February) is 1.6 inches per month. Tinker AFB receives an average annual snowfall total of 7 inches.

The predominant wind direction is from the south-southeast. The average wind velocity is just over 7 miles per hour (mph), with a maximum-recorded gust of 60 mph and a maximum sustained (5 minutes) wind speed of 35 mph. The percentage of possible sunshine ranges from an average of about 55 percent in winter to nearly 80 percent in summer. Thunderstorms occur on about 49 days each year, predominantly in the spring and summer. During the period 1950 to 2003, Oklahoma County recorded 86 tornadoes.

Tinker AFB is located within the Central Oklahoma Intrastate AQCR, which consists of the territorial area encompassed by the boundaries of the following jurisdictions or described area: Canadian County, Cleveland County, Grady County, Lincoln County, Logan County, Kingfisher County, McClain County, Oklahoma County, and Pottawatomie County. Non-attainment and/or maintenance areas do not exist for any of the criteria pollutants in Oklahoma. Therefore, Tinker AFB is not subject to the General Conformity regulations (40 CFR Parts 6, 51 and 93).

Oklahoma has a single Prevention of Significant Deterioration (PSD) Class I area, Wichita Mountains National Wildlife Refuge in Comanche County near Fort Sill Military Reservation. This area is located approximately 130 kilometers southwest of Tinker AFB.

Oklahoma is part of the Central Regional Air Planning Association (CENRAP), an organization of states, tribes, federal agencies, and other interested parties that identifies regional haze and visibility issues and develops strategies to address them. CENRAP is one of the five Regional Planning Organizations (RPOs) across the United States and includes the states and tribal areas of Nebraska, Kansas, Oklahoma, Texas, Minnesota, Iowa, Missouri, Arkansas, and Louisiana. The goals of CENRAP include promotion of policies that ensure fair and equitable treatment of all participating members by providing coordination of science and technology to support air quality policy issues in the region; by recommending strategies on air quality issues for use by member states and tribes in developing implementation programs, regulations, and laws; and by conducting research and undertaking other activities as necessary for information to support the development of sound state and tribal air pollution policies.

3.3.3 Tinker AFB Air Quality

An accurate emissions inventory is needed for assessing the potential contribution of a source or group of sources to regional air quality. An emissions inventory is an estimate of the actual and potential pollutant emissions generated by a source or sources over a period of time, normally a calendar year. The inventory accounts for permitted sources that are required to report annual emissions to EPA. Oklahoma County emissions include emissions from point and area sources. Stationary emission sources at Tinker AFB include boilers, generators, surface coating, paint booths, storage tanks, fueling operations, and woodworking operations, among others. Mobile and biogenic emission sources are not included in the emission totals for Tinker AFB. Table 3-3 compares the 2006 actual and potential emissions for Tinker AFB and the 2001 Oklahoma

County emissions. As shown in Table 3-3, Tinker AFB contributes a small amount to the Oklahoma County emission totals.

Table 3-3
Oklahoma County Emissions and Tinker AFB Actual and Potential Emissions

	Annual Emissions (tpy)					
	CO	**VOC**	**NOx**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
2001 Oklahoma County Emission Inventory[a]	253,221	37,724	34,441	2,607	25,563	6,157
2006 Tinker AFB Actual Emissions[b,d]	133	226	181	8.9	7.2	6.9
2006 Tinker AFB Potential Emissions[c,e]	551	1,153	1,001	68.3	76.5	76.5
Percent of Regional Emissions[f]	5.25E-04	5.99E-03	5.26E-03	3.41E-03	2.82E-04	1.12E-03

Notes:
CO = carbon monoxide
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter equal or less than 2.5 micrometers in diameter.
PM_{10} = particulate matter equal or less than 10 micrometers in diameter.
SO_2 = sulfur dioxide
Tpy = tons per year
VOC = volatile organic compounds

[a] Includes emissions from point and area sources. Source: http://www.epa.gov/air/data/ (U.S. Environmental Protection Agency Air Data).

[b] 2006 actual emissions were obtained from Oklahoma Department of Environmental Quality's Tinker AFB 2006 Air Emissions Turnaround Document. Emissions from mobile and biogenic sources not included.

[c] Potential emissions based upon sources with permit limits. Emissions from mobile and biogenic sources not included. $PM_{2.5}$ emissions assumed to be the same as PM_{10}.

[d] Actual emissions are the air pollutant emissions that result from the actual operation and material usage quantities during a one-year period (i.e., typically a calendar year).

[e] Potential emissions are those emissions resulting from the operation of an emission unit under maximum potential conditions, unless operation is restricted by a regulatory condition (e.g. fuel use limit in permit). For example, calculating emissions from a boiler by taking into account its maximum rated heat input capacity and operation 24 hours per day, 7 days per week, 52 weeks per year would result in a potential emission calculation.

[f] Compares 2006 Tinker AFB actual emissions to Oklahoma County 2001 emission

3.3.4 Air Emissions Sources

Tinker AFB has numerous sources of air emissions from a vast array of industrial, utility, vehicle, and dispensing operations. These operations include boilers, fueling and defueling, aircraft and parts cleaning and painting, electroplating, jet engine testing, firefighter training, and fuel storage.

There are approximately 2,300 air pollution emission sources located at Tinker AFB. Approximately 400 are classified as significant sources with Title V permit requirements. Oklahoma City is in attainment for all criteria air pollutants. Therefore, Tinker emission sources are not subject to additional requirements associated with non-attainment (Draft External EOHCAMP, 2007).

3.4 NOISE ENVIRONMENT

Noise levels in the environment are usually expressed in terms of hourly equivalent sound pressure levels in terms of decibels on the A-weighted scale. When expressed in this manner, noise levels approximate the response of the human ear by filtering out some of the noise in the low and high frequency ranges that the ear does not easily detect The A-weighted scale is also used in most local ordinances and standards.

The noise program is managed by the base civil engineering contractor. Tinker AFB is bordered by Midwest City, Del City, and Oklahoma City. All of these cities have adopted noise ordinances for aircraft and transportation noise. Oklahoma City and Midwest City have adopted airport zoning ordinances for Tinker AFB. The site is located outside the 65 Ldn noise contour (AICUZ Study, 2006). The Air Installation Compatibility Use Zone (AICUZ) study was completed in 2006 and is reviewed annually (Draft External EOHCAMP, 2007).

The proposed location of the GPW is located in a basically industrial area of the base so no sensitive receptors will be affected by the increase in noise levels due to either the construction or operation of the facility.

3.5 BIOLOGICAL RESOURCES

3.5.1 Flora

Oklahoma has a diversity of vegetative communities and species of plants. There are 173 families, 868 genera, and 2,540 species of vascular plants reported for the state (Tyrl, 2002). A total of 276 floristic species are reported to occur on Tinker AFB (Tinker, 2007).

Seven distinct ecoregions are found in Oklahoma (Bailey, 1995). The proposed project area is located in central Oklahoma within Bailey's Prairie Parkland (Subtropical) Province (2512). This province is quite large encompassing an area running from the Canadian border in the north and south to the Texas Gulf Coast. It consists of prairies and savannas and forms an ecotone between the forested areas of the eastern United States and the grassland areas of the Southern Great Plains to the west.

One of the most noted classification and description of vegetation in Oklahoma is the work completed by L.G. Duck and J.B. Fletcher. Their vegetation map for the State of Oklahoma classifies the vegetative communities of Oklahoma by game types (Duck and Fletcher, 1945). The proposed project area is located within the Postoak-Blackjack Oak Forest and Tallgrass Prairie Types.

Prior to settlement, the project area was probably dominated by prairie grasses consisting of species such as big bluestem, little bluestem, switch grass, Indian grass, and various forbs and legumes. However, after settlement and subsequent development, very little of the original vegetative community remains intact within the proposed project area. Most of the site is consists of a concrete pad or asphalt parking lot and is characterized in the Tinker NRMP, 2007

as, "Improved grounds (paved/built)-highly developed land occupied by buildings, roads, parking lot, runways, and other permanent structures." The area adjacent to the access road as shown in (Figures 3-9 and 3-10) is classified as "Riparian" habitat dominated by a vegetative community classified as "Sugarberry Mixed Forest."

The vegetative community associated with the 14.85-acre parcel at the proposed GPW facility has been totally disturbed and replaced with introduced grass species consisting primarily of fescue (*Festuca sp*.) and Bermuda grass (*Cynodon dactylon*). Some species such as western ragweed (A*mbrosia psilostachya*), curly dock (*Rumex crispus*), and Johnson grass (*Sorghum halapense*) are also present in the turf-type grasses. A few trees such as red mulberry (*Morus rubra*) and rough leaf dogwood (*Cornus drummondii*) are growing along the fenced borders.

The largest tract of remaining habitat within the immediate project area is the small riparian zone, which is adjacent to the proposed access road. The vegetative community occurring along the access road to the property include species such as bristle grass (*Setaria sp*.), barnyard grass (*Echinochloa crusgalli*), crabgrass (*Digitaria filiformis*), witch grass (*Panicum virgatum*), curly cup gumweed (*Grindelia squarrosa*), horseweed (*Conyza canadensis*), Illinois bundleflower (*Desmanthus illinoensis*), giant ragweed (*Ambrosia trifida*), annual sunflower (*Helianthus annuus*), western ragweed (*Ambrosia psilostachya*), and broomweed (*Gutierrezia dracunculoides*).

Tree and under-story species associated with the riparian zone and access road include species such as Eastern red cedar (*Juniperus virginiana*), black walnut (*Juglans nigra*), sugarberry (*Celtis laevigata*), American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), coralberry (*Symphoricarpos orbiculatus*), poison ivy (*Toxicodendron radicans*), rough leaf dogwood, red mulberry, black willow (*Salix nigra*), and green briar *(Smilax bona-nox*).

3.5.2 Fauna

The disturbed condition of the native habitat types in the project area severely limit the types and number of wildlife species occurring in the project area. Habitat fragmentation due to previous base development and operation activities and adjacent commercial development has reduced the abundance and diversity of wildlife habitat adjacent to the site. Consequently, existing habitats can only support limited types and numbers of wildlife species. Over 230 species of native and introduced vertebrates have been documented to occur on Tinker AFB (Tinker, 2007). This list includes both resident and migrant species and is composed of 26 mammals, 149 birds, 24 reptiles, 10 amphibians, and 26 fish.

Due to their mobility, most of the wildlife species documented as occurring on Tinker AFB would have the potential to occur on the proposed project site, provided suitable habitat exists. Since there are no permanent water resources on these properties the presence of fish species, amphibians, reptiles, water birds, and waterfowl would be severely limited or curtailed due to lack of habitat. Some of the more common wildlife species potentially occurring on the parcel include the rock dove (*Columba livia*), American kestrel (*Falco sparverius*), American crow (*Corvus brachyrhynchos*), scissor-tail flycatcher (*Tyrannus forficatus*), western kingbird (*Tyrannus verticalis*), eastern kingbird (*Tyrannus tyrannus*), European starling (*Sturnus vulgaris*), field sparrow (*Spizella pusilla*), house sparrow (*Passer domesticus)*, killdeer

(*Charadrius vociferous*), plains pocket gopher (*Geomys bursarius*), hispid cotton rat (*Sigmadon hispidus*), opossum (*Didelphis virginiana*), striped skunk (*Memphitis mephitis*), and deer mouse (*Peromyscus maniculatus*).

The riparian corridor adjacent to the proposed access road has the potential to contain numerous wildlife species due to the presence of the riparian woodland, and small watercourse present within this habitat type. The riparian area also provides a travel corridor for wildlife from ponds and wetlands located immediately east and north of the site. Some wildlife species having the potential to occur on this tract include mammals such as the fox squirrel (*Scirus niger*), raccoon (*Procyon lotor*), Eastern cottontail (*sylvilagus floridanus*), nine-banded armadillo (*Dasypus novemcinctus*), striped skunk (*Mephitis mephitis*), coyote (*Canis latrans*), red fox (*Vulpes fulva*), bobcat (*Felis rufus*), opossum (*Didelphis virginiana*), and white-tailed deer (*Odocoileus virginianus).*

Some of the more common bird species potentially occurring on or around the site include the Mississippi kite (*Ictinia mississippiensis*), Cooper's hawk(*Accipiter cooperii*), red-tailed hawk (*Bueto regalis*), great horned owl (*Bubo virginianus*), barred owl (*Strix varia*), yellow-billed cuckoo (*Coccyzus americanus*), red-headed woodpecker (*Melanerpes erythrocephalus*), barn swallow (*Hirundo rustica*), blue jay (*Cyanocitta stelleri)*, Carolina chickadee (*Parus carolinensis*), tufted titmouse (*Parus bicolor*), Northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), Eastern bluebird (*Sialia mexicana*), Northern cardinal (*Cardinalis cardinalis*), and numerous warblers, sparrows, and other songbirds.

3.5.3 Endangered, Threatened, and Sensitive Species

According to the U.S. Fish and Wildlife Service (2007), there are three federally-listed threatened or endangered species occurring in Oklahoma County. None of the federally-listed species have been reported to occur on Tinker AFB and are not expected to occur in the proposed action area (Tinker, 2007). However, five faunal species classified as "State Species of Special Concern" are known to occur on Base. A list and status of all the federally-listed, state-sensitive, and rare species is shown in Table 3-4.

Table 3-4
Listed Species

Common Name	Scientific Name	Status
***Federally listed Species**		
interior least tern	*Sternula (Sterna) antillarum*	Endangered
whooping crane	*Grus Americana*	Endangered
piping plover	*Charadrius melodus*	Threatened
****Species of Special Concern:**		
barn Owl	*Tyto alba*	SS2
burrowing Owl	*Athene Cunicularia*	SS2
migrant loggerheaded shrike	*Lanius ludovicianus migrans*	SS2
Swainson's hawk	*Bueto swainsoni*	SS2
Texas horned lizard	*Phrynosoma cornutum*	CS, SS2
*****Rare Species**		
powdery thalia	*Thalia dealbata*	S3
Oklahoma penstemon	*Penstemon oklahomensis*	S3

Source:
* U.S. Fish and Wildlife Service, 2007
** Tinker, 2007
***Oklahoma Natural Heritage Inventory Rare Flora, Tinker, 2007

Based on the locations of recorded sightings for sensitive species in the Tinker AFB INRMP 2007, no sensitive species have been recorded on the proposed action site. However, the Swainson's hawk has been noted to occur and utilize the riparian woodland site adjacent to the proposed access road, and the Texas horned lizard was sited near the entrance to the proposed access road (Figure 3-11).

The Texas Horned lizard is found primarily in grassland areas in the southwest corner of Tinker AFB, but has also been found in isolated pockets on the installation. Based upon a single observation, it has been reported to occur near the entrance of the proposed access road. Life history studies for this species conducted on Tinker AFB found it to utilize a variety of habitat types ranging from bare ground to densely vegetated areas of forbs and grasses, but found it selected bare ground and rock more frequently than grass (Tinker AFB, 2007). These studies also found the species to be closely associated with marsh and pond edges, nature/walking trails, and disturbed ground (Endriss, 2006). This species is a "Species of Special Concern" in Oklahoma and afforded statewide protection.

Swainson's hawks are found throughout the base and have historically nested along Kuhlman Creek, south of the golf course. This species has been found to occur in the riparian woodland area adjacent to the proposed GPW facility and access road. It too is considered a "Species of Special Concern" in Oklahoma.

3.6 CULTURAL RESOURCES

Cultural resources on Tinker AFB are protected under the National Historic Preservation Act of 1966, as amended, 16 U.S.C 470a, *et seq*, and the Archaeological and Historic Preservation Act, 1974, as amended, 16 U.S.C. 469, *et seq*. The significance of archaeological resources is

established through a determination of eligibility to the National Register of Historic Places (NRHP) through the State Historic Preservation Office and the Advisory Council on Historic Preservation. Historic architectural resources are evaluated for eligibility to the NHRP before they can be affected or modified.

The cultural resources at Tinker AFB consist of an archaeological component and historic architectural component. The archaeological resources are broken down into two components, and are considered to be either prehistoric or historic. Any cultural resource site predating European settlement is referred to as prehistoric. Any cultural resource site associated with Euro-American settlement is considered to be historic. Two archaeological sites and two historic sites have been identified on the installation (Tinker AFB, 2007).

Historic architectural resources include any structures that are at least 50 years old. These resources may be military facilities or historic buildings on the installation that predate military use of the property. The two historic properties found on Tinker AFB include facilities associated with aircraft construction and modification from 1942 to 1946 and facilities associated with the Cuban Missile Crisis, 1962. The Douglas Cargo Aircraft Manufacturing facilities have been designated as an historic district (Tinker AFB, 2007). These resources are located along the north and northeastern edges of the installation.

Most of the proposed action site has been previously disturbed by earth moving activities associated with construction of the soil remediation pad and asphalt parking lot. Consequently, very little of the original context of the site remains undisturbed. There are no buildings located on the proposed GPW site or access road, and no NRHP eligible structures or features present on the site. The proposed GPW site is not located within any "Historic District." No archaeological sites have been recorded in the vicinity of the proposed GPW site or access road.

3.7 SOCIOECONOMIC ENVIRONMENT

Tinker AFB is located within the incorporated city limits of Oklahoma City, Oklahoma, in Oklahoma County. The socioeconomic status of Tinker AFB and the region are addressed in this subsection. The scope of this subsection includes population, housing, education, and economic activity.

3.7.1 Population

According to the U.S. Census Bureau (USCB), the 2000 estimated population for Oklahoma County was 660,448, representing an approximately 9.2 percent increase from 1990 to 2000 (USCB 2007a, USCB 2007b). An estimated 506,132 people, or 76.6 percent, of the 2000 Oklahoma County population reside in Oklahoma City (USCB 2007c, USCB 2007a); the average family size in Oklahoma City is 3.04 (USCB 2007d). Oklahoma City, which is located entirely within Oklahoma County, experienced a faster growth rate from 1990 to 2000 compared to Oklahoma County. For Oklahoma City, the 2000 population estimate of 506,132 represents an increase of 12.1 percent over the 10 year period (USCB 2007c, USCB 2007b). In contrast, population growth for the State of Oklahoma from 1990 to 2000 was approximately 8.8 percent (USCB 2007e, USCB 2007 b), and the nationwide population growth was 11.6 percent from 1990 to 2000 (USCB 2007f, USCB 2007g).

3.7.2 Housing

The Tinker AFB Housing Requirements and Market Analysis (HRMA) for 2007 defines the housing market area as covering a 60 minute commute or 20 miles from Tinker AFB headquarters building or major work centers (USAF, 2007). The HRMA analyzes data from 2006 and makes projections through 2011. In 2006, there are projected to be 166,882 rental units, 39,479 units are considered to be unsuitable by Air Force standards. Of the remaining suitable rental units (127,403), an estimated 116,699 will be occupied and 10,704 will be vacant. According to the 2007 HRMA, there are currently 694 military family housing units at Tinker AFB.

3.7.3 Education

Children who live in permanent quarters on Tinker AFB, as well as those living off-Base in Oklahoma City attend schools within the Midwest City-Del City School District.

The Midwest City-Del City School District includes 17 elementary schools, 5 junior highs, and 3 high schools. Midwest City-Del City School District provides an educational program for over 14,000 students (source). The total population increase for Tinker AFB would be less than one percent, which would not overload the enrollment of any schools.

3.7.4 Economy

Tinker AFB Economic Activity and Contribution: The following information is summarized from the 2006 Tinker AFB Economic Impact Report (USAF, 2006).

Tinker AFB generates economic activity in the region through employee payrolls, service contracts, construction programs, and other expenditures. Approximate annual payroll for Tinker AFB in Fiscal Year (FY) 06, statewide, was $1.2 billion, the Metropolitan Statistical Area (MSA) accounted for $1.1 billion of the payroll. The MSA covers Oklahoma, Cleveland, Canadian, Lincoln, McClain, Grady, and Logan Counties. The annual expenditures for contracts and procurements; materials, equipment, and supplies; construction; health; temporary duty; education; base exchange; and commissary for the State of Oklahoma was $945.8 million and for the MSA was $886.7 million. The number of positions held by personnel considered a primary job at Tinker AFB was 25,287 statewide and 22,515 in the MSA. Secondary jobs held statewide at Tinker AFB were 29,093 and 25,893 in the MSA. In 2006, Tinker AFB executed $5.0 billion in annual contract awards and processed more than 13,000 contractual actions.

Regional Employment and Income: According to the 2000 Census, per capita personal income in Oklahoma City was 13.0 percent lower than the US average (USCB 2007h, USCB 2007i). In 2000, Oklahoma City unemployment rate was 3.3 percent, which was equal to the state average (3.3 percent) and below the US average (3.7 percent) (USCB 2007h, USCB 2007i, USCB 2007j). In Oklahoma City, the leading non-governmental industries in 2000 were education, health, and social services (17.5 percent of working civilian population); retail trade (11.9 percent of working civilian population); manufacturing (11.0 percent of working civilian population); and professional, scientific, management, administrative, and waste management

services (9.4 percent of working civilian population). Of the population in Oklahoma City, 14.8 percent work for federal, state, or local governments (USCB 2007i).

3.8 TRANSPORTATION AND SAFETY

The transportation systems on and around Tinker AFB are numerous and include roads, airports, railroads, and mass transit. In addition to providing access within the base, these systems provide access to the surrounding communities, region, nation, and global destinations.

The on-Base transportation network consists primarily of two and four land arterial and collector roadways that circulate traffic around and through the installation. The major arterial roadways include Air Depot Road, East Drive, Arnold Road, and Patrol Road. The primary collector roadways include McNarney Avenue, Reserve Road, and Mitchell Avenue (Tinker AFB, 2005).

The system of roads that serve Tinker AFB are extensive. The major local arterial roadways providing access to Tinker AFB include Sooner Road, SE 29th Street, and Douglas Boulevard (Tinker AFB, 2005). Major highways providing access to Tinker AFB include Interstate Highways 40 and 240.

Sooner Road is a four-lane arterial that runs north to south along the west side of the Base. SE 29th Street is an east-west arterial that provides access to Tinker AFB at Air Depot Boulevard and at Eaker Gate. Douglas Boulevard is four lane arterial that runs north to south and provides access to Tinker AFB at Lancer Gate. These facilities were constructed and maintained by Oklahoma City, Oklahoma County, Midwest City, Del City, and the Oklahoma Department of Transportation (Tinker AFB, 2005).

Interstate 40 runs east to west along the northern edge of Tinker AFB and provides access via Air Depot Boulevard and the Tinker Gate. Interstate 240 runs east to west along the southern edge of Tinker AFB and provides access to Tinker AFB via Sooner Road, Air Depot Boulevard, and Douglas Boulevard.

Three major interstate highway systems intersect in Oklahoma City and include Interstate 44, Interstate 35, and Interstate 40. Interstate 35 bisects the United States running from Mexico in the south to Canada in the north. Similarly, I-40 bisects the nation running from the east coast to the west coast. I-44 provides a southwest corridor connecting Wichita Falls, Texas, with St. Louis, Missouri (Tinker AFB, 2005). These travel corridors provide a high degree of connectivity to the region and nation and promote regional development.

Six public and private airports operate in the Oklahoma City area with Will Rogers Airport being the largest. Will Rogers Airport is one of the largest airports by land area in the nation and is served by six major airlines, five regional airlines, and various charter airline services (Tinker AFB, 2005).

Mass transit services are also available to Tinker AFB. The Central Oklahoma Transportation and Parking Authority operates Metro Transit (Metro), which provides 25 interconnecting bus routes and three express bus routes (Tinker AFB, 2005).

Rail service to the Oklahoma City area is provided by the Burlington Northern/Santa Fe (BNSF) and Union Pacific (UP). The BNSF has a rail yard adjacent to the Base southern boundary and the proposed GPW facility.

Security is a major focus at Tinker AFB, and entry is secured by 11 entry control points. Eaker Gate and Lancer Gate are the primary gates and do not close. Tinker Truck Gate is located on the southwest corner of the base and provides a single access point for delivery vehicles and heavy equipment entering the installation (Tinker AFB, 2005). Truck access to the proposed GPW facility would be through Truck Gate from Interstate Highway 240 or Interstate Highway 40 via SE 59th Street (East of Gott Gate).

Day-to-day construction operations and maintenance activities conducted at Tinker AFB are performed in accordance with applicable U.S. Air Force safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational Safety and Health (AFOSH) requirements. Construction and demolition activities on the installation are required to have appropriate job site safety plans, which explain how job safety will be assured throughout the life of the project. Construction and demolition workers are also required to follow applicable OSHA requirements.

Figure 3-1
TAFB Site Location

Legend

- Tinker AFB
- Cities
- State/County Boundaries

0 25 50 Miles

N W E S

WESTON SOLUTIONS

Source: Tinker NRMP, 2007

OKLAHOMA

Tulsa

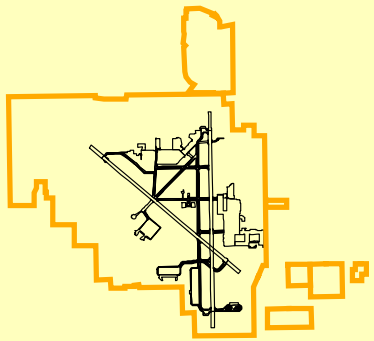
Oklahoma City

Midwest City

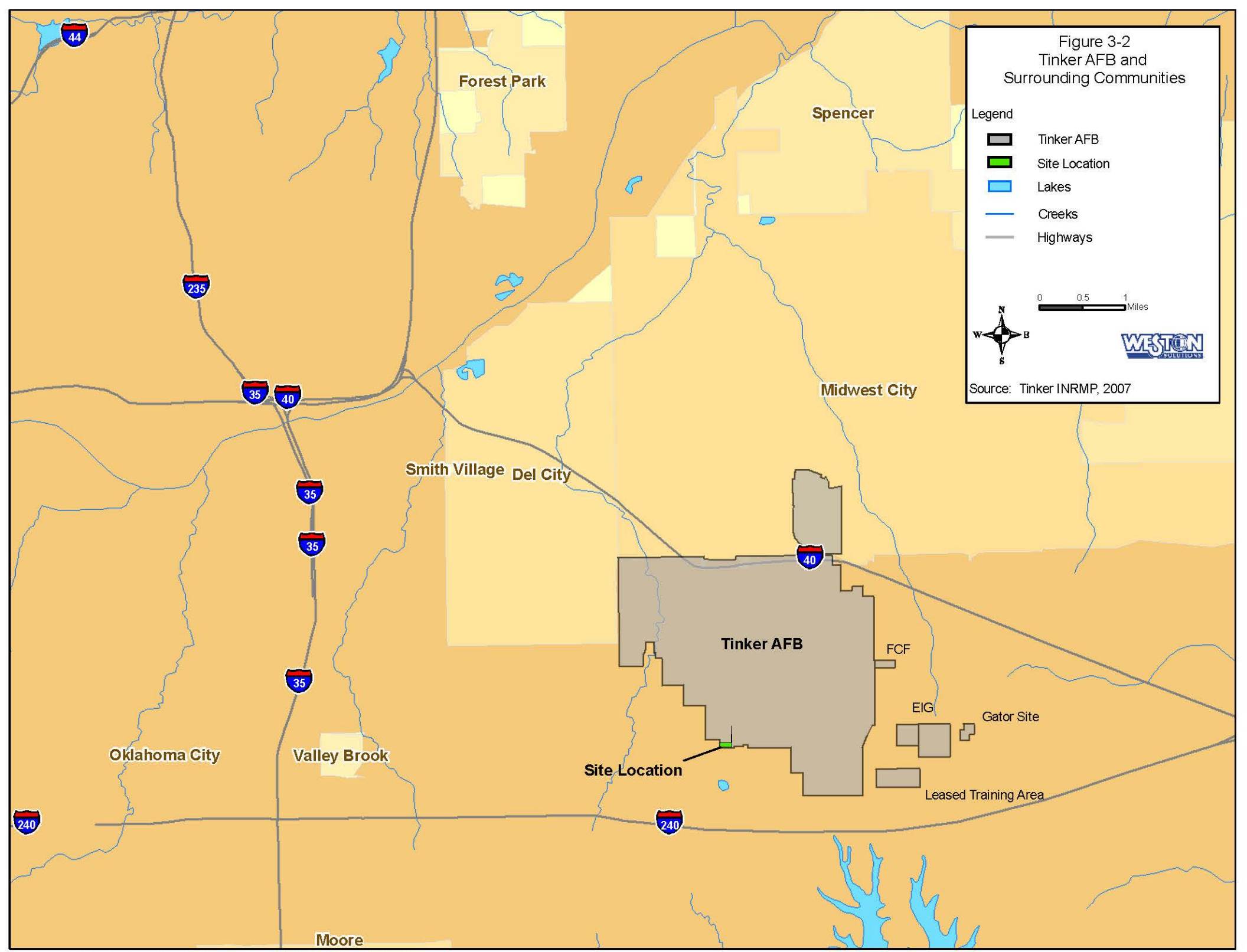
Norman

Fort Sill

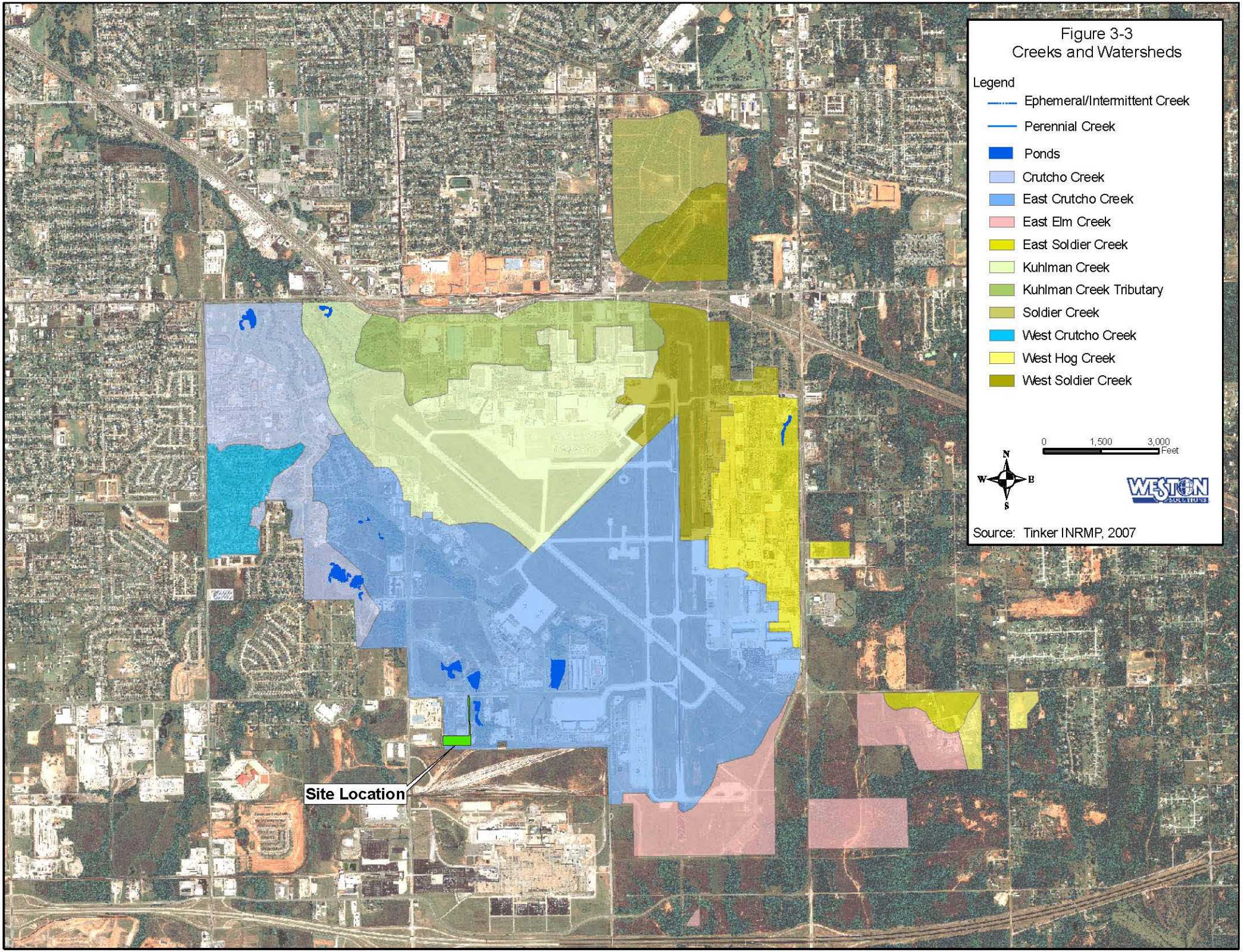
Tinker Air Force Base



File: \\Fsfed01\TIG\AETC\Tinker\MXD\location_vinicnty.mxd, 13-Feb-08 11:54, ricksc



GIS Project Files\Tinker AFB (20077)\GIS\tinker_surrounding_communities.mxd, 20-Mar-08 11:28, barbozal



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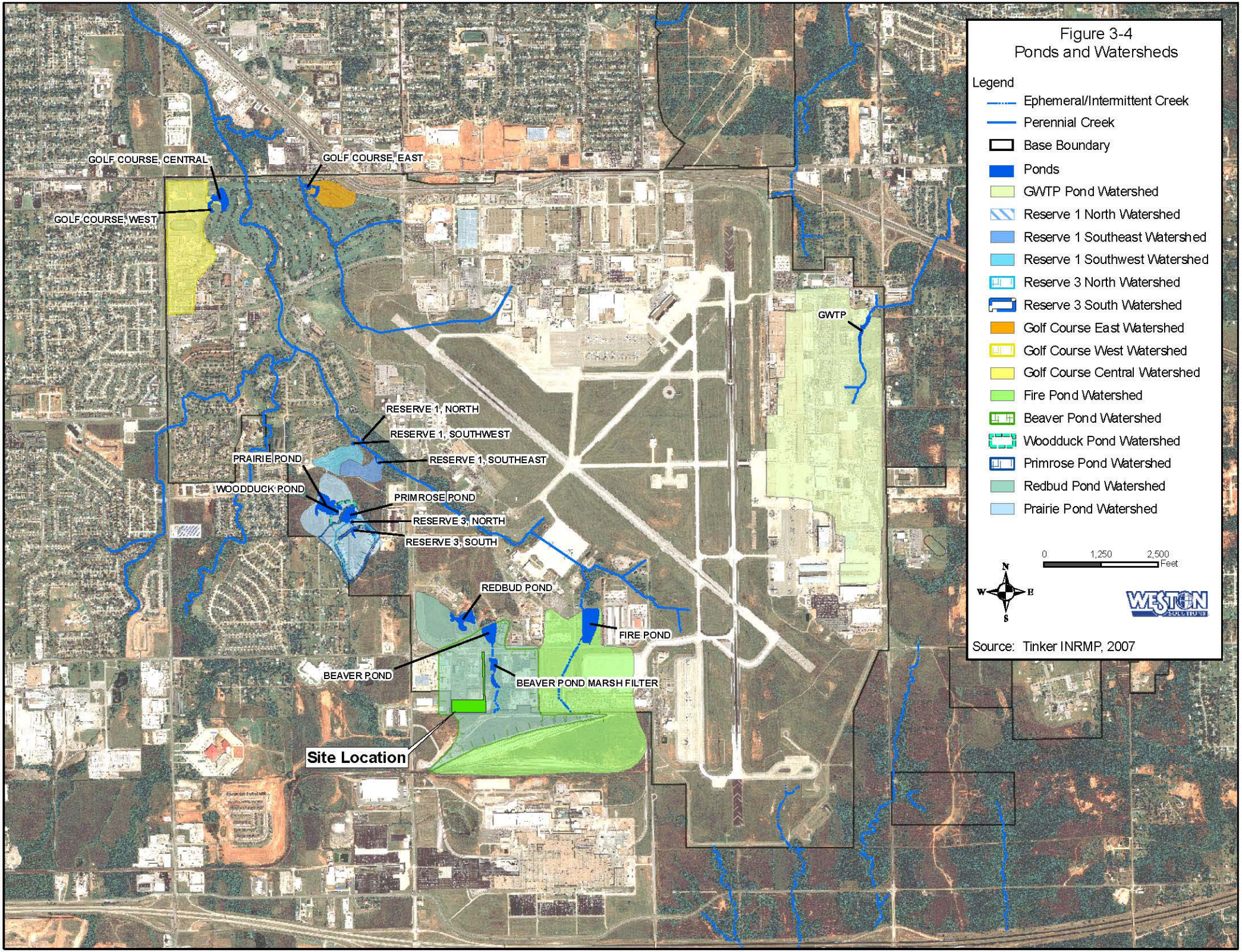

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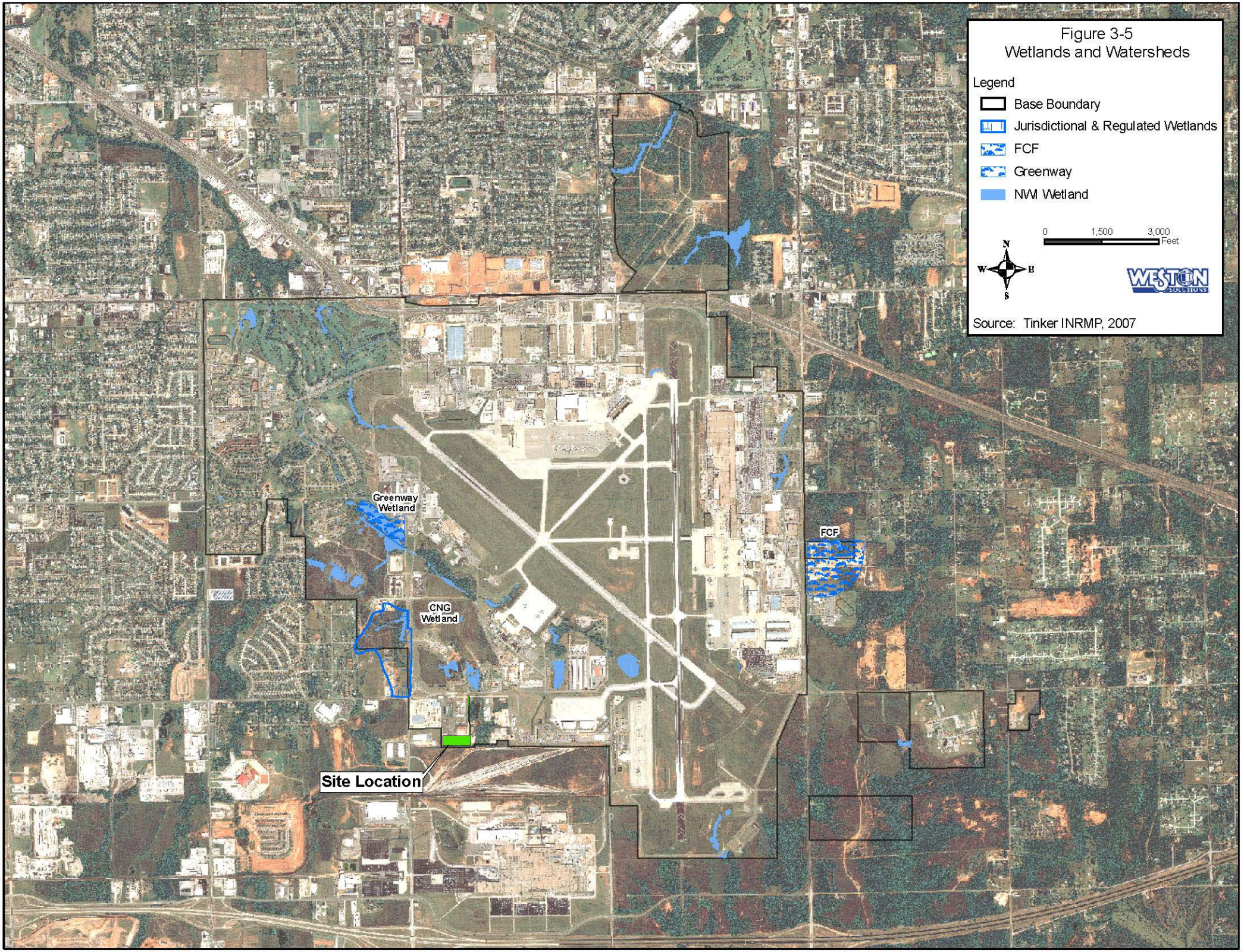
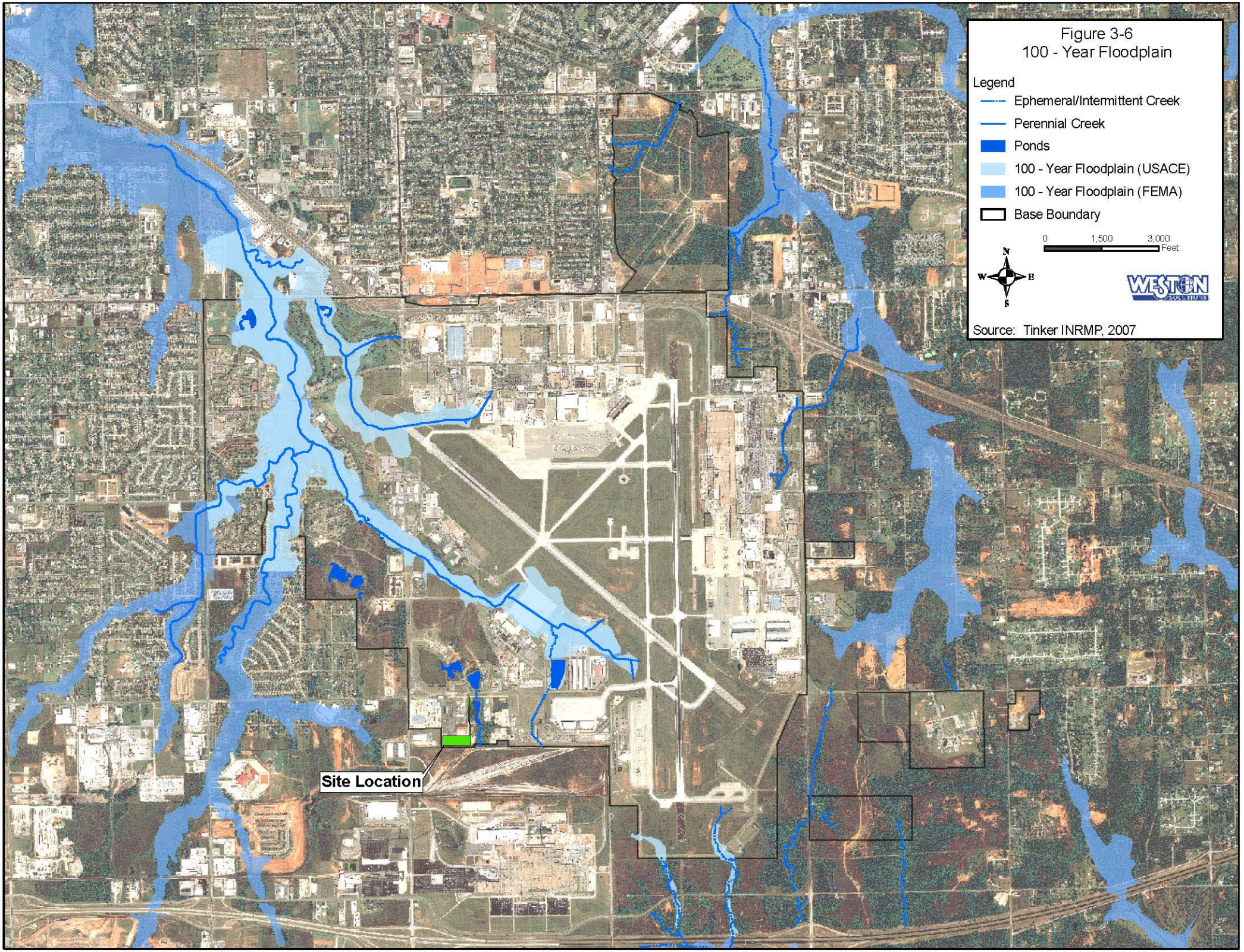


Figure 3-5
Wetlands and Watersheds
Legend
Base Boundary
Jurisdictional & Regulated Wetlands
FCF
Greenway
NWI Wetland
0
1,500
3,000
Feet
N
W
E
S
Source: Tinker INRMP, 2007
Greenway Wetland
CNG Wetland
FCF
Site Location



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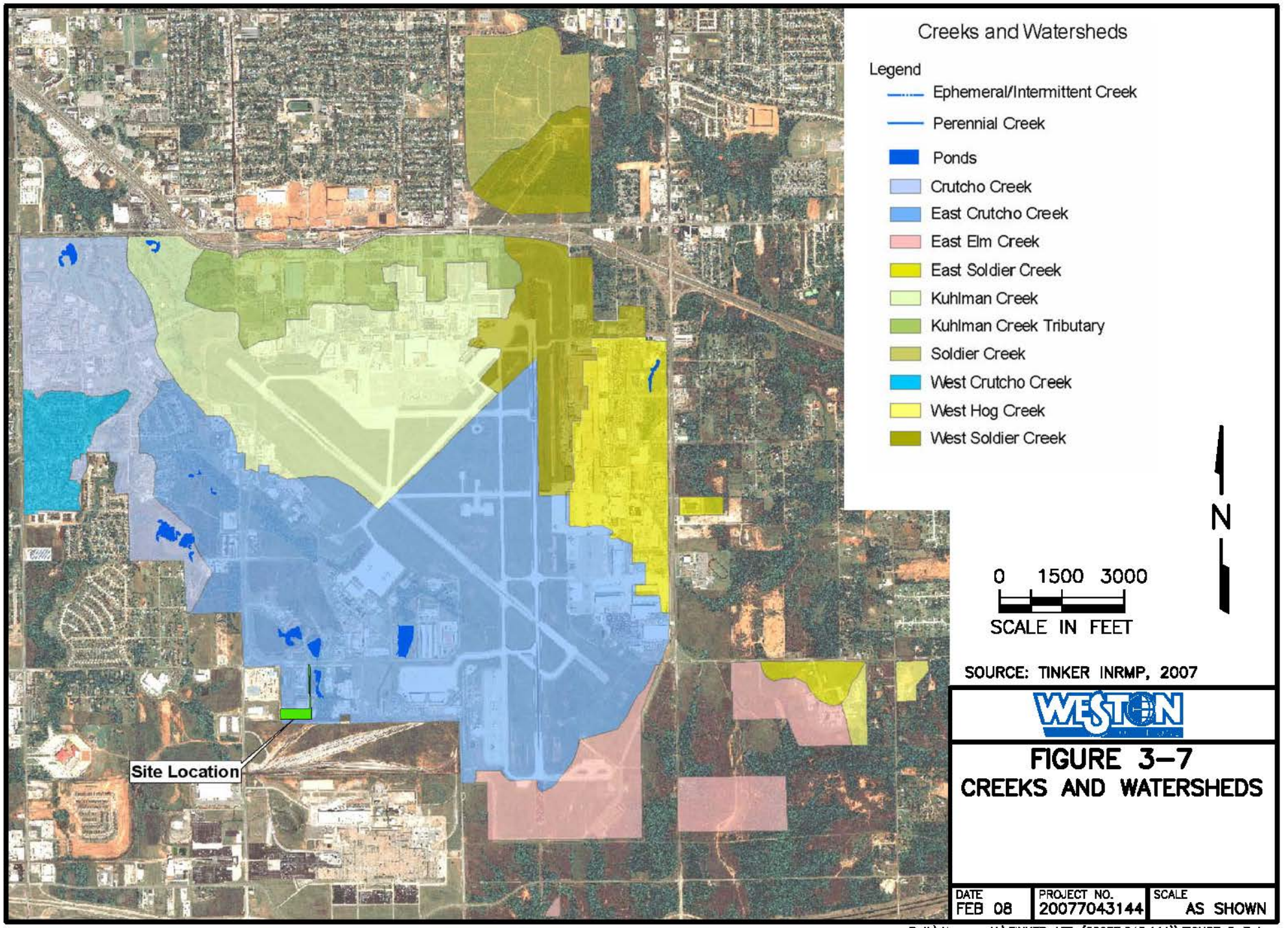


SOURCE: TINKER INRMP, 2007

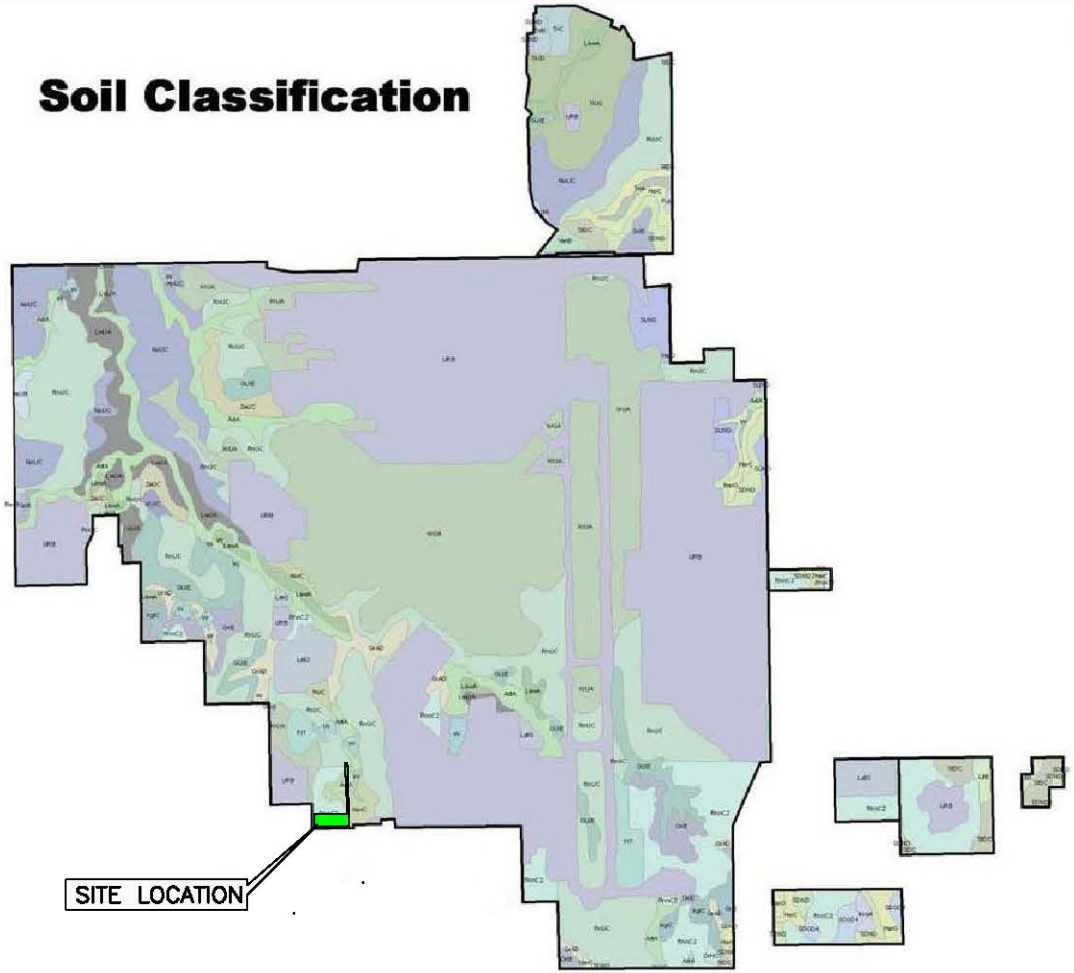
WESTON

FIGURE 3-7
CREEKS AND WATERSHEDS

DATE	PROJECT NO.	SCALE
FEB 08	20077043144	AS SHOWN

Path\Name : H:\TINKER AFB (20077.043.144)\FIGURE 3-7.dwg

Soil Classification



0 2000 4000

SCALE IN FEET

N

SOURCE: TINKER INRMP, 2007

Soil Types

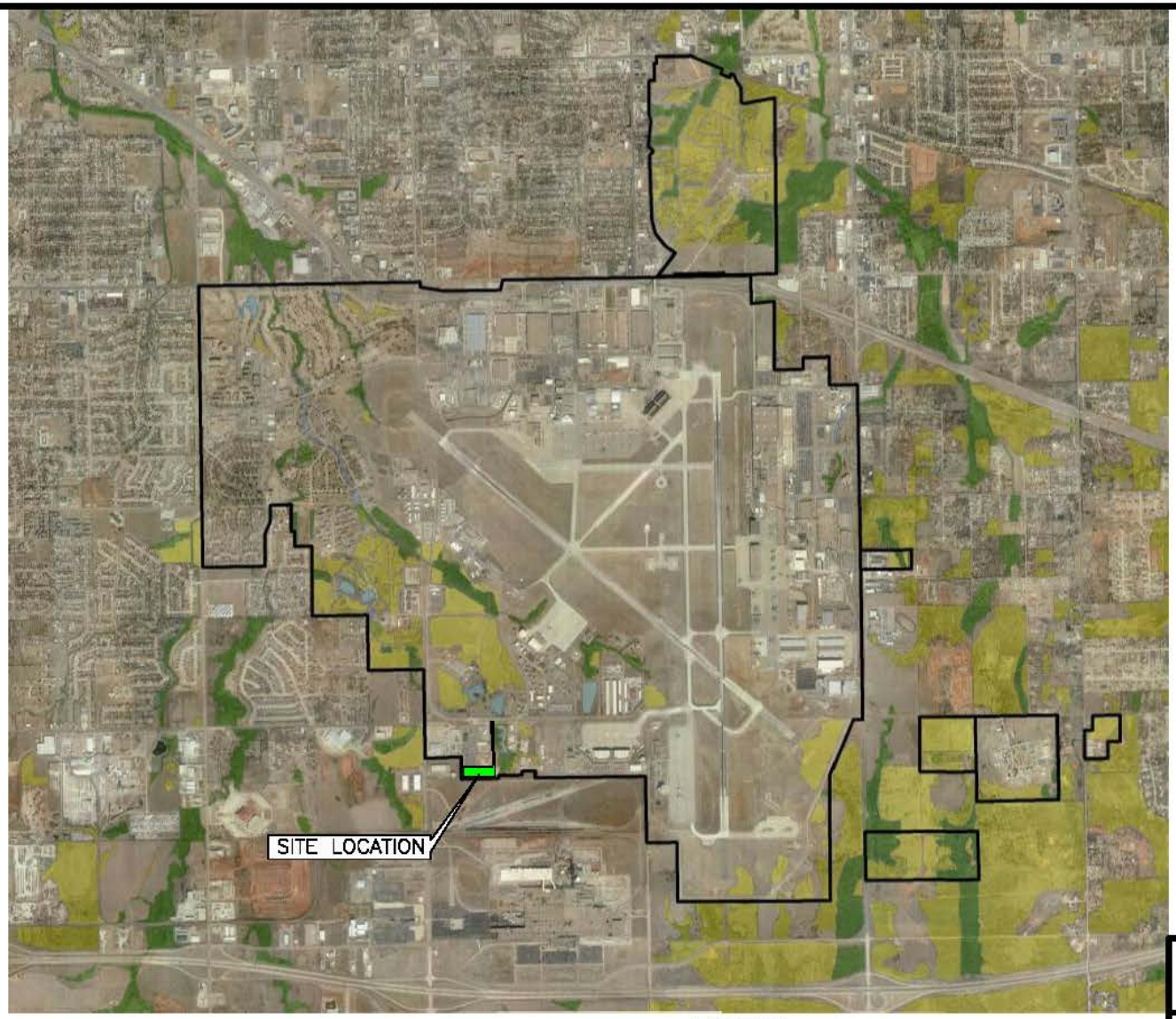
- Ashport silt loam (AstA)
- Bethany silt loam (BetA)
- Bethany-Urban land complex (BeUB)
- Grainola-Ashport complex (GrAD)
- Grainola-Ironmound complex (GrIE)
- Grainola-Urban land-Ironmound (GUIE)
- Grant-Huska complex (GrHC)
- Harrah fine sandy loam (HarC)
- Kingfisher-Ironmound complex (KgIC)
- Kirkland silt loam (KrdA)
- Kirkland-Urban land complex (KrUA)
- Kirkland-Urban land-Ironmound (KUIC)
- Latrass loam (LatG)
- Lawrie loam (LawA)
- Lawrie-Urban land complex (LwUA)
- Littleaxe fine sandy loam (LitB)
- Norge silt loam (NorC)
- Norge-Urban land complex (NoUC)
- Pits (PIT)
- Pulaski fine sandy loam (PulA)
- Renfrow silt loam (RenB)
- Renthin silty clay loam (RnnC2)
- Renthin-Urban land complex (RnUC)
- Stephenville-Darsil complex (StDC)
- Stephenville-Darsil-Guillies land (SDGD4)
- Stephenville-Darsil-Newalla (SDND)
- Stephenville-Urban land-Newalla complex (SUND)
- Teller fine sandy loam (TlrB)
- Teller-Urban land complex (TlLD)
- Tribbey fine sandy loam (TriA)
- Urban land (URB)
- Vanoss silt loam (VanB)
- Water (W)
- Zaneis-Urban land complex (ZaUC)

WESTON SOLUTIONS

FIGURE 3–8
SOIL CLASSIFICATIONS

DATE	PROJECT NO.	SCALE
FEB 08	20077043144	AS SHOWN

Path\Name : H:\TINKER AFB (20077.043.144)\FIGURE 3–8.dwg



LEGEND

- BASE BOUNDARY
- UPLAND HABITAT
- RIPARIAN HABITAT

N

0 2000 4000

SCALE IN FEET

SOURCE: TINKER INRMP, 2007

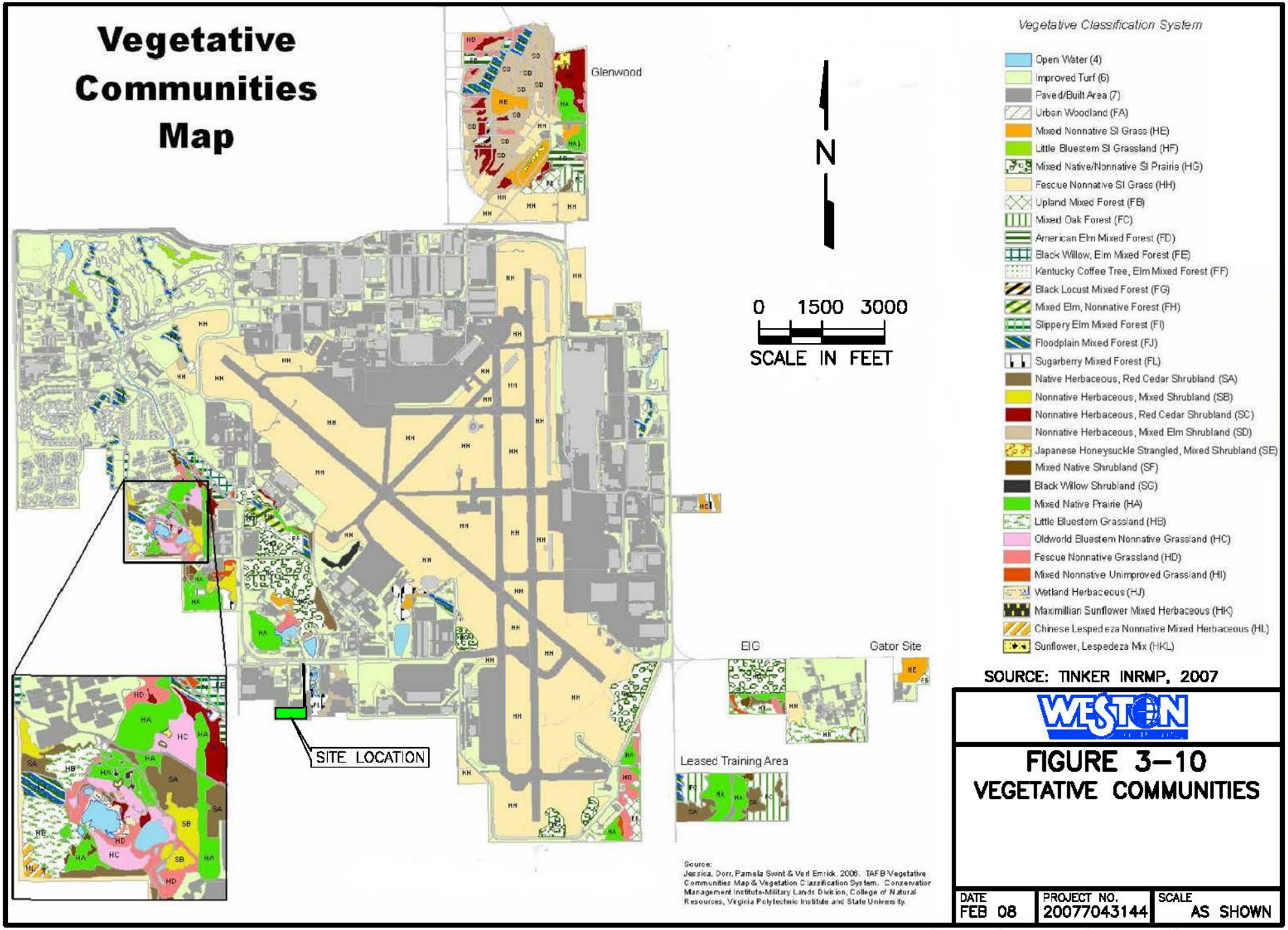
WESTON

FIGURE 3-9
WILDLIFE HABITAT

DATE	PROJECT NO.	SCALE
FEB 08	20077043144	AS SHOWN

Path\Name : H:\TINKER AFB (20077.043.144)\FIGURE 3-9.dwg

Vegetative Communities Map



SOURCE: TINKER INRMP, 2007

Source:
Jessica, Dorr, Pamela Swint & Verl Emrick. 2006. TAFB Vegetative Communities Map & Vegetation Classification System. Conservation Management Institute-Military Lands Division, College of Natural Resources, Virginia Polytechnic Institute and State University.

WESTON

FIGURE 3–10
VEGETATIVE COMMUNITIES

DATE	PROJECT NO.	SCALE
FEB 08	20077043144	AS SHOWN

Path\Name : H:\TINKER AFB (20077.043.144)\FIGURE 3-10.dwg

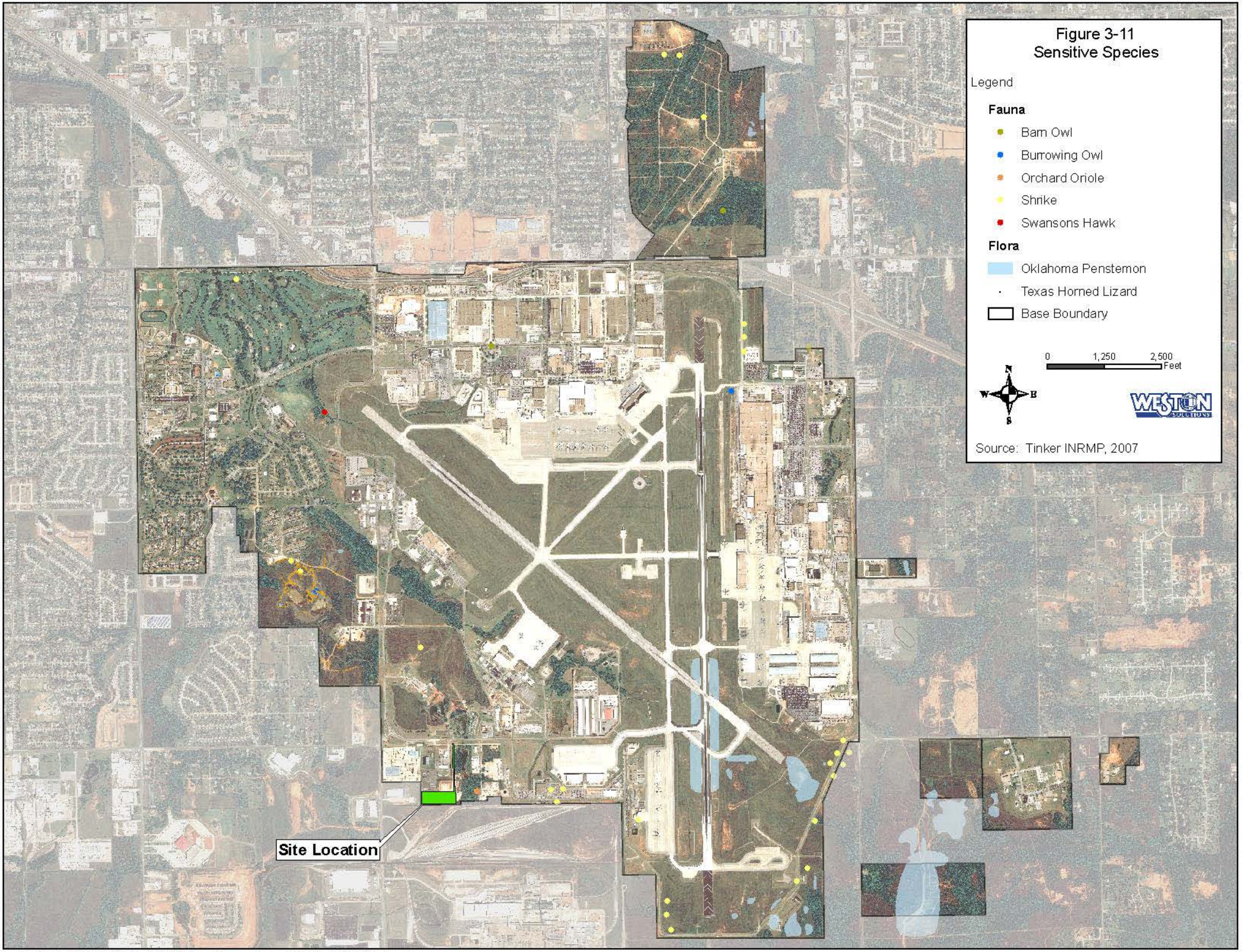


Figure 3-11
Sensitive Species
Legend
Fauna
Barn Owl
Burrowing Owl
Orchard Oriole
Shrike
Swansons Hawk
Flora
Oklahoma Penstemon
Texas Horned Lizard
Base Boundary
0
1,250
2,500
Feet
N
W
E
S
WESTON SOLUTIONS
Source: Tinker INRMP, 2007
Site Location

CHAPTER 4.0
ENVIRONMENTAL EFFECTS

This chapter addresses the potential impacts associated with implementation of the proposed action. Impact assessments are based on the description of the proposed action as presented in Chapter 2.0 and existing environmental conditions for the proposed site as presented in Chapter 3.0. The environmental effects for the No-Action Alternative were not considered due to authorizing language contained in BRAC 2005. A summary of the predicted environmental impact associated with implementation of the proposed action are displayed in Table 2-1.

4.1 PHYSICAL ENVIRONMENT

For purposes of this evaluation, the physical environment of Tinker AFB includes its topography, surface waters, floodplains, storm water, wetlands, geology, soils, groundwater, and water supply and drinking water.

4.1.1 Topography

A description of the topography of the proposed location of the GPW facility and access road is contained in Subsection 3.2.1.

Most of the site topography has been previously altered with construction of the asphalt parking lot, soil remediation pad, and gravel access road. However, implementation of the proposed action would require additional alterations to the already modified topography. Existing soil coverings would be removed and portions of the site would require from 2 to 12 feet of fill material. The existing topography of the gravel access road would also change with the proposed upgrade to a two-lane concrete access road. It would probably be somewhat higher and wider than the existing gravel road.

4.1.2 Surface Waters

A description of the surface waters at the proposed location of the GPW facility and access road is contained in Subsection 3.2.2.

As shown in Figure 3-4, there are no surface water features on the proposed site for the GPW facility. The nearest surface water features are located north of the proposed action site across SE 59th Street and to the east of the access road. Construction of the proposed GPW facility would not impact these surface water features. A small ephemeral stream drains the site and runs from the southwest to the northeast. This stream crosses the access road and would require the installation of some type of stream crossing or culvert.

4.1.3 Floodplains and Wetlands

Floodplains and wetlands associated with the proposed GPW facility and access road are discussed in Subsection 3.2.3 of this EA.

The U.S. Department of Interior NWI maps were searched for the presence of any wetlands located on the proposed GPW site or access road. As shown in Figure 3-5, there are no wetlands present on the proposed action site. The FEMA Flood Insurance and Rate Map for Oklahoma County and USACE floodplain study were consulted for the occurrence of floodplains and floodways on the property. As can be seen in Figure 3-6, the proposed site and access road are not located within any designated floodplain or floodway.

However, an important pond and wetland complex is located along the eastern edge of the riparian zone, which borders the proposed access road (Figure 4-1). This complex consists of a natural wetland deemed the Beaver Pond and a mitigation wetland project that is approved and sited for construction. The wetland approved for construction and sited, provides mitigation for the loss of a 0.8 acre wetland associated with activities at the Fuel Control Facility and a requirement to improve water quality in the Beaver Pond and Beaver Marsh Filter. Protection and maintaining the integrity and functionality of this wetland complex and watershed are concerns associated with implementation of the proposed action.

Wetlands are afforded protection in accordance with the Clean Water Act of 1973 and Executive Orders 11988 and 11990. Also, State protection requirements for wetlands are outlined in the Oklahoma Conservation Commission's Comprehensive Wetlands Conservation Plan (OCC, 1996). To protect the downstream wetlands the, GPW facility will be designed in accordance with the noted State and Federal requirements, statues and executive orders to assure the continued functionality and values of the wetlands. If impacts are unavoidable they will be minimized to the maximum extent practicable and appropriate mitigation measures incorporated into the project.

With implementation of the proposed action, increased storm water runoff would occur on the site. The sources of this increase would be from the roof of the 165,000 square foot GPW facility, concrete access road and ditches, and hard surface parking lots. Consequently, the quality of runoff water from the proposed GPW facility into the downstream wetlands and recreational fisheries in Beaver Pond, Beaver Marsh Filter, and Redbud ponds is also a concern. The Oklahoma Water Resources Board has requirements related to water quality standards for wetlands (Oklahoma Water Quality Standards, Title 785, Chapter 45, 2007), which sets specified limits that must be met. The GPW facility will be designed to meet the required standards.

Any storm water discharges associated with construction and operation of the Proposed Action would be designed for compatibility with the Beaver Marsh Filter wetland complex. Construction of the GPW facility would require a Storm Water Discharge Permit from ODEQ. This permit would be obtained prior to initiation of construction, and should ensure the continued functionality and protection of the Beaver Marsh Filter, Beaver Pond, and FCF mitigated wetland. Consequently, implementation of the proposed action should not have a significant adverse or beneficial impact on floodplains or wetlands.

If the Wetland complex is designated as a jurisdictional wetland the design agent will ensure that all requirements to obtain a 404 Contsruction Permit are designed into the project. The constrator will have to obtain the 404 permit prior to beginning construction activities.

4.1.4 Storm Water

Storm waters associates with Tinker AFB are described in Subsection 3.2.4 of this assessment.

Presently, there is no storm water drainage systems located on the proposed action site. Runoff from the site flows to the north and northeast into the Beaver Marsh Filter area and eventually into Crutcho Creek. With implementation of the proposed plan, the same pattern of storm water runoff would be anticipated to occur. However, storm water runoff rates would be somewhat higher due to runoff from the roof of the 165,000 square foot GPW facility, associated parking areas, and paved access road.

Storm water runoff and associated flooding during storm events are concerns at Tinker AFB and in the surrounding communities. Storm water runoff from the site flows into the Crutcho Creek drainage basin and into the North Canadian River. The proposed GPW facility is located within the Beaver Marsh Filter Watershed, which contains the FCF mitigated wetland (Figure 4-1). The FCF has been sited and approved for construction, but has not been constructed. The Beaver Marsh and FCF mitigation wetland improve water quality in Beaver Pond, retain floodwaters, and maximize holding times of storm water runoff.

The storm water pollution plan for Tinker AFB requires storm water management and erosion/sediment control in accordance with 40 CFR Part 122 and ODEQ regulations. Consequently, a storm water discharge permit would be required and obtained prior to the start of construction activities from the ODEQ. The requirements of this permit and their implementation would assure continued functionality and protection of the Beaver Marsh Filter watershed and associated wetland complex.

DDOO will have to prepare a Emergency Spill Plan which will include protective measures to ensure protection of the wetland complex from a spill.

4.1.5 Geology and Soils

A description of the geology and soils of Tinker AFB with respect to construction of the proposed GPW facility and access road are provided in Subsection 3.2.5 of this assessment.

Most of the site is composed of soils within the Renthin-Grainola-Piedmont series. These soils are described as deep, well drained, and occurring on uplands. None of the described soils occurring on the site are classified as Prime or Unique Farmlands, as defined by USDA. Most of the soils at the site have been previously disturbed with construction of the soil remediation pad, asphalt parking lot, and gravel access road. With implementation of the proposed action, the site would be graded and leveled as needed to prepare the site for construction. During construction the potential for increased erosion would exist until the site is paved and vegetation reestablished on unpaved areas. Erosion prevention measures would be included in construction contracts to minimize surface erosion resulting from construction activities. These types of measures could include the installation of silt fences, hay bales, construction of temporary silt containment basins, and mulching. Upon completion of construction, all disturbed areas would be re-

vegetated to prevent additional erosion and loss of soil. No significant negative or positive effects to area soils are anticipated as a result of constructing the proposed project.

4.1.6 Groundwater

A discussion on groundwater at the proposed GPW facility and access road is contained in Subsection 3.2.6 of this assessment.

Groundwater at Tinker AFB ranges from a few feet to about 70 feet depending upon the local topography. Typically, soils in the RnnC2 series are well drained with depth to a water table of more than 6 feet. Some contaminated groundwater plumes do exist at a depth of 175 feet or shallower on Tinker AFB. These plumes are primarily a result of aircraft maintenance and overhaul operations that occurred between the mid-1940s and mid-to-late 1970s. No intrusive activities were conducted as part of the Environmental Baseline Survey (EBS) at this location, and no wells were observed during the visual site inspection. Based on the records search and discussions with Tinker AFB environmental personnel, there were no groundwater issues at this time. Operation of the proposed GPW facility and access road would deal primarily with commodities for shipping, and should have no impact on groundwater conditions at the site. Consequently, implementation of the proposed action would not have a positive or negative impact on the groundwater at Tinker AFB.

4.1.7 Water Supply and Drinking Water

A discussion on water supply and drinking water for Tinker AFB is included in Subsection 3.2.7 of this assessment.

Since there are no potable water facilities on the proposed GPW site, water lines would have to be constructed to the site. Water supply lines currently service adjacent buildings (808, 809, and 810), so access to an existing line would not be difficult. Fire protection lines exist to the northeast of the proposed site along Air Depot Boulevard. A water tower is also located to the east of the proposed facility at Building 850, so water pressure should not be a problem.

Approximately 110 employees would be assigned to the new CCP. They would work three shifts, so the maximum number in the facility at any given time would be 72 employees. Additional potable water would be used by the new employees at the GPW. The current water use of the base is averages 55,000 – 60,000 Kgal/month The 50 employees would use an estimated 150 Kgal/month of water. This amounts to an increase of less than 0.5 percent to the Installtion existing water supply use. Implementation of the proposed action would not affect the existing water supply at Tinker AFB to a significant degree.

4.2 AIR QUALITY

Air quality associated with Tinker AFB is discussed in Subsection 3.3.3.

Construction activities result in short-term localized emissions from construction vehicles and fugitive dust. Various types of construction equipment will be used for the construction, clearing, and grading for the facilities and road. Such impact is temporary and is not considered significant. Best Management Practices (BMPs) will be used to control fugitive dust as required during construction. The proposed facility does not involve the addition of new air emission sources.

4.3 WASTE MANAGEMENT AND TOXIC MATERIALS

4.3.1 Wastewater

Wastewater discharges associated with Tinker AFB is discussed in Subsection 3.3.5.

The proposed facility operation will add minor amounts to the wastewater generated at Tinker AFB, but will not have an impact to the overall wastewater volume generated at Tinker AFB..

4.3.2 Solid Waste

The Solid Waste Management Program at Tinker AFB is discussed in Subsection 3.3.6.

The proposed facility construction operation will add minor amounts to the solid waste generated at Tinker AFB, but will not have an impact on the base solid waste program.

4.3.3 Hazardous Materials and Waste

The Hazardous Materials and Waste Program at Tinker AFB is discussed in Subsection 3.3.7.

The proposed new facility operation will not handle any additional hazardous materials that are not already being handled by DDOO at this time. Therefore, there will be no impact from this project.

The proposed new facility will not be generating any hazardous waste. Therefore, there will be no impact from this project.

4.3.4 Toxic Materials

Toxic Materials at Tinker AFB were discussed in Subsection 3.3.8.

Implementation of the Proposed Action would not adversely impact toxic materials or toxic waste or the environment as it relates to materials known as ACM, LBP, PCB, or PCB-containing equipment..

4.4 NOISE ENVIRONMENT

The Noise Environment at Tinker AFB was discussed in Subsection 3.4.

Heavy equipment used for the construction will increase noise levels intermittently and could potentially create a temporary nuisance for people living and working nearby. The impact will be short-term and not significant. However, because of its temporary nature, construction activities are generally restricted to normal working hours at Tinker AFB. Construction activities do not involve the addition of new noise sources. As such, no long-term impact for the noise environment will occur.

The DDOO operation will be a 24-hour operation. They will be receiving approximately 30 trucks per day to load and unload. The additional truck movement will cause an increase in the vehicular noise traffic; however, since all trucks will be arriving through Gott Gate, the increase will noise levels will be of very short duration. The trucks will go through the truck inspection point and then to the facility which is less than ½ mile. Since these activities are short duration, they will only have a very slight impact on the noise levels in that area of the Tinker AFB. No sensitive receptors will be affected by the increase in noise levels.

4.5 BIOLOGICAL ENVIRONMENT

The biological resources associated with construction of the proposed GPW facility and access road are discussed in Subsection 3.5 of this assessment. A description and discussion of the flora is contained in Subsection 3.5.1, the fauna in Subsection 3.5.2, and threatened, endangered, and/or sensitive species in Subsection 3.5.3.

4.5.1 Vegetation

Construction of the proposed facility would alter approximately 10 acres of land that is presently designated as "Paved Built Area" (Tinker AFB, 2007). Most of the 10 acres consists of asphalt or gravel parking lots, or a concrete soil remediation pad, as shown in Figure 3-10. The remainder is composed of mowed areas or fence lines. Consequently, vegetation on the site is of limited diversity and consists primarily of turf or lawn type grasses. Due to the lack of native vegetation species, implementation of the proposed action would not significantly affect the vegetation communities on the 14.85-acre site.

The proposed access road runs south from SE 59th Street to the proposed GPW facility on an existing roadbed. It borders riparian woodland habitat described as sugarberry mixed forest and contains a diversity of vegetative species. The maximum eastern construction limit for the new road shall extend no further than fifty feet east of the existing north-south chain-link fence (bordering the east side of the hazardous waste facility). However, during the design and construction of the access road, designers/construction workers shall work with base natural resources personnel to develop and implement a design and appropriate construction measures which will avoid any encroachment on the woodlands, if practicable. If encroachment is unavoidable, then it shall be minimized to the maximum extent practicable and appropriate mitigation measures incorporated into the project.

4.5.2 Fauna

Due to the lack of habitat on the proposed site for the GPW facility, implementation of the proposed action would not impact many faunal species on the 14.85-acre site. However, some permanent impact would occur to species that utilize the riparian woodlands located along the eastern edge of the access road. The short-term impact would disappear somewhat upon completion of construction. Over time and through natural succession, the impacted area would become re-established with vegetative species similar to what occurs on site now. With appropriate mitigation these impacts would be substantially reduced. Because of the urban setting of the proposed action, negligible adverse impact to wildlife species are anticipated as a result of implementing the proposed action with appropriate mitigation measures.

4.5.3 Threatened, Endangered, and/or Sensitive Species

No flora on Tinker AFB is classified as state or federal species of concern or proposed/listed as threatened or endangered in accordance with the Endangered Species Act. However, rare species do occur on base. Two rare floral species, the Oklahoma Penstemon and the powdery thalia, occur on base, but not within the proposed GPW facility site. Powdery thalia is an emergent aquatic species and the Oklahoma Penstemon is found in mixed native prairies. Neither of the two habitat types required by these species occurs on the proposed action site.

There are no federally listed threatened or endangered species occurring on Tinker AFB. However, there are five "State Species of Special Concern" occurring on Tinker AFB and include the barn owl, burrowing owl, migrant loggerheaded shrike, Swainson's hawk, and the Texas horned lizard. As shown in Figure 3-11, only the Texas horned lizard and the Swainson's hawk have been recorded near the proposed action site.

The Texas horned lizard occurs primarily in sparsely vegetated grasslands, but can survive in an urban environment. A single sighting of this species near the entrance of the proposed access road is the only evidence this species occurs in the general area. Implementation of the proposed action would not be expected to have a positive or negative impact on this species.

The Swainson's hawk occurs throughout Tinker AFB, and is known to utilize the riparian woodlands located adjacent to the proposed action access road. Shorter-term impact would include increases in human activity, increased disturbance from heavy equipment, and increases in noise levels. Shorter-term impact would disappear somewhat upon completion of construction.

4.6 CULTURAL RESOURCES

The cultural resources of Tinker AFB relative to construction of the proposed GPW facility and access road are discussed in Subsection 3.6 of this assessment.

No archaeological sites are known to occur on or near the proposed action site. Most of the area is classified as developed land and was previously impacted by construction of the soil remediation pad and asphalt parking lot. No buildings are present on the site that would be eligible for inclusion on the National Register of Historic Places. The Historical District and other historic sites are located completely across the installation from the proposed action site. Consequently, implementation of the proposed action would not have a positive or negative impact on cultural resources.

4.7 SOCIOECONOMIC ENVIRONMENT

A discussion on the socioeconomic environment associated with construction of the GPW facility and access road are included in Subsection 3.7 of this assessment. Tinker AFB generates economic activity in the region through employee payrolls, service contracts, construction programs, and other expenditures. The number of positions held by Tinker AFB personnel is 25,287 statewide and 22, 515 in the MSA. Tinker AFB is a major contributor to the economy of the MSA and State of Oklahoma. Approximate annual payroll for Tinker AFB in FY 2006 statewide was $1.2 billion, the MSA accounted for $1.1 billion of the payroll. Annual expenditures of Tinker AFB in the State of Oklahoma were $945.8 million and for the MSA was $886.7 million.

Implementation of the proposed action would create an additional economic stimulus to the state and regional economy through new construction expenditures, and increased annual expenditures associated with staffing, operating, and maintaining the proposed GPW facility. The cost of constructing the new facility is estimated at $27.8 million including construction labor salaries, equipment, materials, site improvements, pavements, communications, and utilities. These economic benefits would occur within the initial construction period (2008 to 2011).

An estimated 100 employees would be required to operate and maintain the proposed GWP facility. Fifty (50) of the 100 positions at the new GPW would be new positions. These new salaries would create additional economic benefits to the local and regional economy. The costs to operate and maintain the proposed facility over a 5-year period were estimated at $3.7 million

or about $740,000 annually. These annual expenditures would provide annual benefits to the local economy long after the economic effects of initial construction are gone.

Executive Order 12898 requires "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." Guidance provided by the Council on Environmental Quality (CEQ 1997) and EPA (1998). Environmental Justice has been defined as the pursuit of equal justice and equal protection under the law for all environmental statutes and regulations without discrimination based on race, ethnicity, or socioeconomic status. Implementation of the proposed action would benefit equally all local communities, populations, races, and socioeconomic groups. Implementation of the proposed action would not generate disproportionately high or adverse human or environmental effects on minority and low-income populations.

Executive Order 13045, "Protection of Children from Environmental Health Risks," requires the proposed action to be evaluated with respect to generation of disproportionately high environmental health and safety risks to children. The intent of the Executive Order is to recognize that children, still undergoing physiological growth and development, are more sensitive to adverse environment health and safety risks than adults. There are no residences that might house children in close proximity to the proposed action Area, and no hazardous materials will be generated or stored at the GPW facility. Consequently, implementation of the proposed action should not adversely impact children.

4.8 TRANSPORTATION AND SAFETY

A discussion on transportation and safety with respect to the GPW facility and access road are shown in Subsection 3.8 of this assessment.

The most probable source of off-Base truck access to the proposed GPW facility would be entry through the Trcuk Gate from Interstate Highways 40 and 240, via SE 59th Street. On-Base truck traffic would probably use access off SE 59th Street, from Air Depot Road.

An analysis of truck traffic on Tinker AFB shows that current commercial truck traffic supporting DDOO activities represent only 1 in 14 trucks entering Tinker AFB. The existing total Tinker AFB truck traffic/month is approximately 5,726 trucks. Existing DDOO truck traffic/month is approximately 414 or 7 percent of the Tinker AFB total truck traffic. During contingency operations, this figure is estimated to be somewhat higher at 725 trucks/month and runs between 7 percent and 17 percent (MACTEC, 2007). It is estimated that with operation of the CCP under normal conditions, truck traffic would increase by as much as 30 tractor trailers a day (trucks coming and going in a 24-hour period). This equates to an increase to 1314 trucks per month or 20 percent of the total truck/month usage at Tinker AFB. An increase of this magnitude, or less than 2 trucks per hour, would not constitute a significant increase in truck traffic or cause significant adverse impact.

Operation and support of the GPW facility would require approximately 100 employees. Of the 100, only about 50 would be new employees at the CCP. This small increase in personnel would not create a significant impact on gate access or traffic patterns either within or off the installation.

During construction there would be a temporary increase in numbers of construction workers and heavy equipment in the southwest section of the base. Minor delays would be expected to occur as a result of construction and demolition activities around the site. Consequently, temporary and intermittent impact on traffic patterns around SE 59th Street, Air Depot Road, and Patrol Road would be expected. Due to the site location of approximately ½ mile from Gott Gate, impact should be much localized. Consequently, implementation of the proposed action is not expected to have a significant adverse impact on traffic patterns or transportation in general.

4.9 ENVIRONMENTAL JUSTICE

On 11 February 1994, President Clinton issued EO 12898, "Federal Actions to Address Environmental Justice in Minority and Low-income Populations." The purpose of the Executive Order is to avoid the disproportionate placement of any adverse environmental, economic, social, or health impact from federal actions and policies on minority and low-income populations. President Clinton directed the EPA to ensure that agencies analyze the effects on minority and low-income communities, including human health, social, environmental, and economic effects.

Implementation of the preferred alternative does not involve any construction or related work outside of the Tinker AFB boundary. No disproportionate or adverse impact to communities or to children outside the Tinker AFB boundaries will occur as a result of the preferred alternative.

4.10 CUMULATIVE IMPACT

The Council on Environmental Quality (CEQ) regulations (40 CFR parts 1500-1508) implementing the procedural provisions of NEPA of 1969, as amended (42 U.S.C., 4321 et seq.) define cumulative impacts as, "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions."

Determining cumulative impact requires identifying the cause-and-effect relationships between the multiple actions and affected resources, ecosystems, and human communities of concern. For the purpose of determining cumulative impact in this assessment, relevant past and present actions are defined as the existing base development and current levels of operations.

Tinker AFB identified the relevant reasonably foreseeable actions to include the following:

- Construction of a new 172,000-square foot medical clinic, in open land near Gott Gate (FY 09).
- Construction of a new 64,000-square foot Consolidated Security Forces, South 40 Development facility on the south side of the base (FY 10/11).
- Construction of new 32,877-square foot Child Development Center in the southwest portion of the Base, north of SE 59th Street and northwest of Gott Gate (FY 10).

The more recent urban growth pattern adjacent to Tinker AFB is concentrated along the west and southwest sides of the Base. The 2030 land use plan for the area shows that lands east of the

Base are proposed for industrial development and environmental conservation. Lands south of the Base are proposed for industrial development, while lands to the west are proposed for urban growth (Oklahoma City, 2007). Similarly, the human communities of concern for evaluation include the existing base development and surrounding communities in the designated growth areas.

Cumulative impact was determined based upon the scope of the proposed action, the current levels of base development and operations, and relevant reasonably foreseeable actions. Consequently, implementation of the proposed action combined with the reasonably foreseeable actions would have the potential for the following cumulative impact:

- Incremental increases in air pollution emissions.
- Incremental impacts on traffic patterns.
- Incremental increases in generation of solid waste.
- Incremental land use conflicts.
- Incremental impacts on storm water runoff/water quality.

With implementation of the proposed action, there would be an associated increase in air pollution emissions. Short-term increases in air emissions would result from construction activities, increased truck traffic, increased automobile usage to the proposed GPW facility during the construction period. Other construction projects within the same time frame would also incrementally contribute to increases in air pollution emissions from the same sources. Long-term increases in air pollution emissions at the proposed GPW site would result from increased truck traffic and increased automobile traffic from workers. Similar incremental impact on air pollution emissions would result from operation of the reasonable and foreseeable construction projects. However, the cumulative impacts of these actions on traffic patterns and transportation in general would not be considered significant.

With implementation of the proposed action, there would be an associated increase in truck traffic through Gott Gate at the rate of about two trucks per hour. Also, operation of the GPW facility would require approximately 100 personnel that would probably use personal vehicles for attending work, which would further contribute to increased traffic in this area of the base. Similarly, the other proposed facilities would require staffing with similar automobile usage. Consequently, construction and operation of the GPW facility along with the three identified reasonable and foreseeable projects would have adverse incremental impact on traffic patterns. Additional impact to traffic patterns and gate delays would also result during the construction period, but would be short-term. Concentrating these facilities in the southwestern portion of the Base would create the potential for disruptions in traffic flow and gate delays.

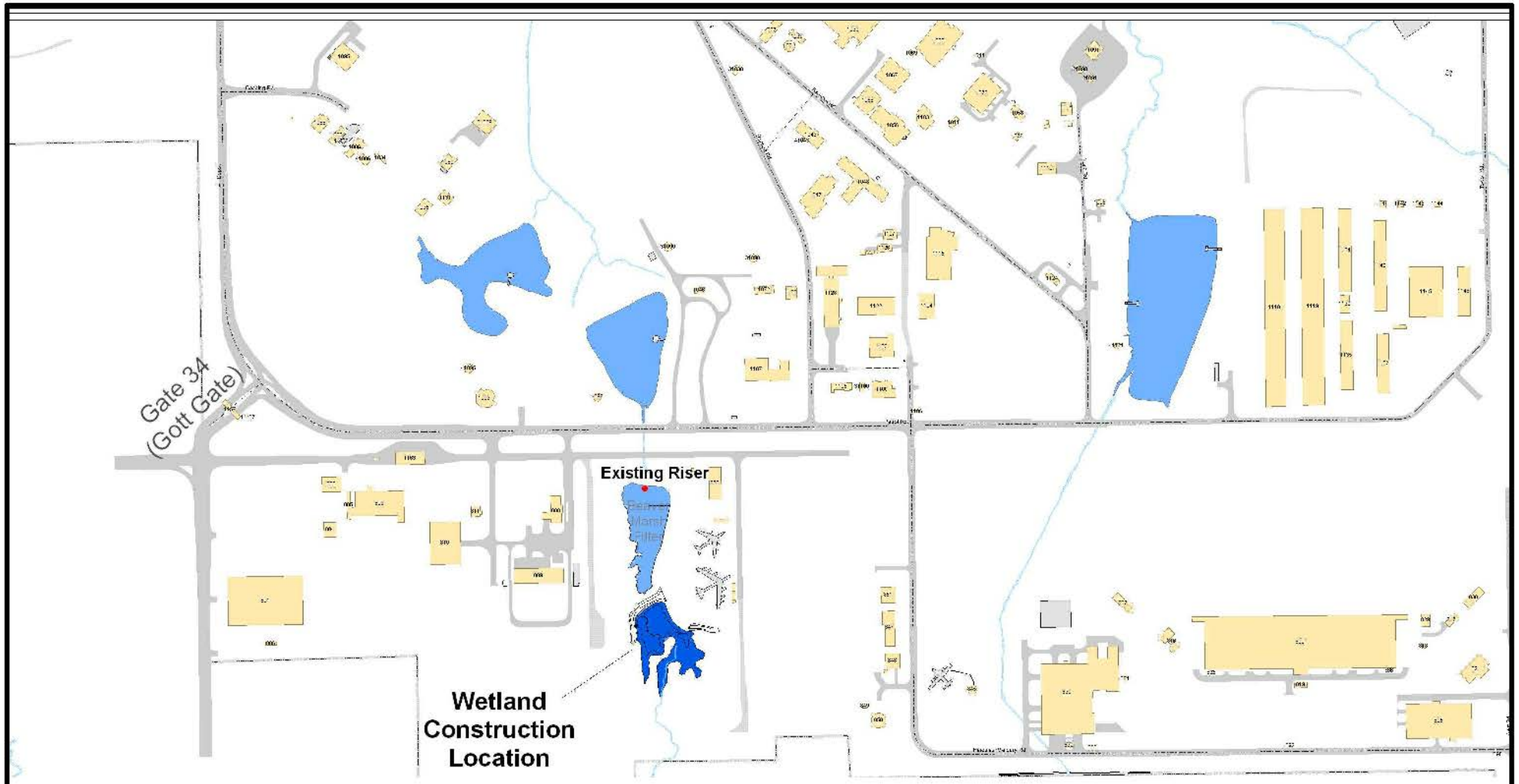
Cumulative impact associated with the production of solid waste from implementation of the proposed action and other construction projects could impact local landfill capacities. However, the quantities and types of solid waste generated by all the construction projects would probably not be considered a major impact on existing landfill capacities.

Implementation of the proposed action and other construction projects are located in the southwest part of Tinker AFB. Much of this area was formerly open space areas. With

implementation of the proposed action and other construction projects, there would be incremental losses to open space areas. This area is already heavily developed with limited open space areas remaining. Continued development of open space would result in loss of lands available for recreational purposes, loss of wildlife habitat, and urbanization. This trend is also predicted to occur off-Base, which would further magnify the incremental adverse impact on this resource.

The development of open space could also have incremental impacts on storm water runoff and water quality. Increases in rooftops, parking lots, and impervious surfaces result in increased storm water runoff rates, increased flooding potential, and decreased water quality for sediment and contaminants. These impacts would be magnified incrementally with construction of all the identified reasonable and foreseeable projects. Increased development is predicted to occur off-Base, which would further magnify the incremental adverse impact on these resources. With proper construction safeguards, construction of storm water detention basins, and implementation of proper BMPs, the incremental impact on water quality and storm water runoff can be mitigated. Projects impacting more than 1 acre are required to have Storm Water Pollution Prevention Plan in accordance with ODEQ regulations. Compliance of the cumulative actions with these regulations should mitigate cumulative impact on storm water runoff and water quality.

No federally-listed threatened or endangered species are found on Tinker AFB. However, five sensitive species designated as state "Species of Special Concern," and two rare species of flora do occur on the installation. In the southwestern portion of the base where the proposed action and reasonable and foreseeable projects are located, the most likely sensitive species to occur are the Texas horned lizard, shrike, and Swainson's hawk. No significant impacts are expected from the construction and operation of the GPW facility.



FCF Wetland Mitigation Vicinity Map G1

Road__centerlines
Structures-slabs
Facilities

Driveways

Paved Status
Paved
Unpaved

Roads

Paved Status
Paved
Unpaved
installation_area

Perennial
Intermittent-human influenced constant flow
Intermittent Ephemeral
Diverted under Airfield

FCF Mitigated Wetland
<all other values>

Description
Beaver Marsh
Borrow areas
Dam Land Form Contours
Wetland Normal Pool
ponds

0 300 600
SCALE IN FEET

N

SOURCE: TINKER AFB ENVIRONMENTAL

WESTON

FIGURE 4-1

FCF
MITIGATED WETLAND

DATE	PROJECT NO.	SCALE
FEB 08	20077043144	AS SHOWN

Path\Name : H:\TINKER AFB (20077.043.144)\FIGURE 4-1.dwg

CHAPTER 5.0
LIST OF PREPARERS

Name/Organization	Degree	Resource Area	Years of Experience
Steve Daneke/WESTON	B.S., Civil Engineering	Project Manager, Multiple Areas	20
Jim Randolph/WESTON	B.S., Biology M.S., Zoology	NEPA Compliance Water Resource Planning Threatened and Endangered Species	36
Loretta Turner/WESTON	B.S., Chemical Engineering	Technical Review	12
Alice Martin/WESTON	N/A	Administrative Support	3
Carlton Hendrix/WESTON	B.S., Environmental Engineering; M.S., Civil Engineering	Quality Control	9
Julie Mello/WESTON	N/A	Document formatting	15
Tamara Carroll/WESTON	B.S., Bioenvironmental Science	Document Collaboration Tool Coordinator, Document formatting	6

CHAPTER 6.0
PERSONS CONTACTED

Scoping for this EA was conducted in accordance with Title 40 *Code of Federal Regulations* (CFR) Parts 1500 through 1508, USAF implementing regulations 32 CFR 989, Environmental Impact Analysis Process, and the USAF EIAP Desk Reference, May 1995. Certified letters of notification requesting comments on the proposed action were sent to appropriate federal, state, and local agencies on or about 1 February 2008. A list of the scoping agencies is included in Appendix A. Responses from commenting agencies are included in Appendix B.

The list of individuals contacted during preparation of this EA is included in Appendix A.

APPENDIX A

AGENCY/PUBLIC CORRESPONDENCE

APPENDIX A
LIST OF AGENCIES CONTACTED

Association of Central Oklahoma Governments
Audubon Society of Central Oklahoma
City of Del City
City of Midwest City
City of Oklahoma City, Planning Department
City of Oklahoma City, Ward Four
EPA Region VI, Compliance Assurance and Enforcement Division (6EN-XP)
Federal Emergency Management Association (FEMA)
Greater Oklahoma City Chamber of Commerce, Government Relations
Oklahoma Archaeological Survey
Oklahoma Corporation Commission
Oklahoma County, District Two
Oklahoma Department of Environmental Quality, Customer Services Division
ODEQ Site Assessment Unit, Community Action Board
Oklahoma Department of Transportation, Planning and Research Division
Oklahoma Department of Wildlife Conservation
Oklahoma Geologic Survey
Oklahoma Historical Society, Administration
Oklahoma State Historic Preservation Office
Oklahoma Water Resources Board, Planning and Management Division
Oklahoma Wildlife Federation
Sierra Club, Oklahoma Chapter
Tinker AFB Community Advisory Board Members
US Army Corps of Engineers, Tulsa District, Planning and Environmental Division
US Army Corps of Engineers, Tulsa District, Regulatory Division
US Department of Agriculture, Natural Resources Conservation Service
US Fish and Wildlife Services, Division of Ecological Services
USEPA-Region 6 (6SF-LP) #1200 Community Action Board

Company	Department	Job Title	Suffix	FIRST NAME	LAST NAME	ADDRESS 1	ADDRESS 2	CITY	STATE	ZIP	PHONE
Association of Central Oklahoma Governments	Community Action Board		Mr.	John	Harrington	21 E Main	Suite 100	Oklahoma City	OK	73104-2405	405-234-2264
Audubon Society of Central Oklahoma		President	Ms.	Jane	Cunningham	5505 NW 66th Street		Oklahoma City	OK	73132	405-721-5711
City of Del City	Community Action Board	Assistant City Manager	Mr.	Jim	Depuy	4517 SE 29th Street		Del city	OK	73115	405-671-2800
City of Midwest City	Community Action Board	Environmental Services Director	Mr.	William	Janacek	8730 SE 15th Street		Midwest City	OK	73110	405-739-1380
City of Oklahoma City	Planning Department	Mayor		Mick	Cornett	200 N Walker	Suite 302	Oklahoma City	OK	73102	405-297-2424
City of Oklahoma City	Ward Four	Councilman	Mr.	Pete	White	200 N Walker		Oklahoma City	OK	73102	405-297-2402
DEQ Sit Assessment Unit	Community Action Board			Hal	Cantwell	P.O Box 1677		Oklahoma City	OK	73101	
EPA Region VI	Compliance Assurance and Enforcement Division (6EN-XP)	Chief	Ms.	Cathy	Gilmore	1445 Ross Avenue		Dallas	TX	75202-2733	214-665-8150
Federal Emergency Management Association (FEMA)			Mr.	Carl	Watts	800 North Loop 288		Denton	TX	76209	940-898-5128
Federal Emergency Management Association (FEMA)			Mr.	Jim	Orwat	800 North Loop 288		Denton	TX	76209	940-898-5302
Greater Oklahoma City Chamber of Commerce	Government Relations	Vice President	Mr.	Dean	Schirf	123 Park Avenue		Oklahoma City	OK	73102	405-297-8933
Greystone Environmental Inc	Community Action Board			Kathy	Lippert	1000 W Wilshire	Suite 340	Oklahoma City	OK	73166	
Marketing Data Analyst	Community Action Board		Mr.	Richard	Reginald	1821 Oaks Way		Oklahoma City	OK	73131	
OK Toxics Campaign	Community Action Board		Mr.	Earl	Hatley	19257 S 4403 Drive		Vinita	OK	74301	
Oklahoma Archaeological Survey		State Archaeologist	Dr.	Robert	Brooks	111 E. Chesapeake		Norman	OK	73019-5111	405-325-7211
Oklahoma Corporation Commission		Chairman	Mr.	Jeff	Cloud	P.O. Box 52000		Oklahoma City	OK	73152-2000	405-521-2264
Oklahoma County	District Two	County Commissioner	Mr.	Brent	Rinehart	320 Robert S. Kerr	Room 101	Oklahoma City	OK	73102-3441	405-713-1502
Oklahoma Department of Environmental Quality	Customer Services Division	Executive Director	Mr.	Steve	Thompson	P.O. Box 1677		Oklahoma City	OK	73101-1677	405-702-9122
Oklahoma Department of Transportation	Planning & Research Division	Environmental Director	Ms.	Dawn	Sullivan	200 NE 21st Street		Oklahoma City	OK	73105	405-521-2704
Oklahoma Department of Wildlife Conservation		Director	Mr.	Greg	Duffy	P.O. Box 53465		Oklahoma City	OK	73152	405-521-4660
Oklahoma Geological Survey		Director	Dr.	Charles	Mankin	100 East Boyd St.	Suite N131	Norman	OK	73019	405-325-3031
Oklahoma Historical Society	Administration	Executive Director	Mr.	Bob	Blackburn	2401 North Laird Avenue		Oklahoma City	OK	73105	405-522-5202
Oklahoma State Historic Preservation Office		Deputy SHPO	Ms.	Melvena	Heisch	2401 North Laird Avenue		Oklahoma City	OK	73105	405-522-4484
Oklahoma Water Resource Board	Planning & Management Division	Chief		Lou	Klaver	3800 N. Classen		Oklahoma City	OK	73118	405-530-8800
Oklahoma Wildlife Federation		Executive Director	Mr.	Andy	McDaniels	P.O. Box 7566		Edmond	OK	73083-7566	
Ralph Ellison Library	Community Action Board			Susie	Beasley	2000 NE 23rd		Oklahoma City	OK	73111	
Sierra Club, Oklahoma Chapter		Chair	Mr.	Larry	Edmison	P.O. Box 60644		Oklahoma City	OK	73146-0644	405-521-0345
US Army Corps of Engineers, Tulsa District	Planning & Environmental Division	Chief of Floodplains	Mr.	Joe	Remondini	1645 S. 101 East Avenue		Tulsa	OK	74128-4609	918-669-7182
US Army Corps of Engineers, Tulsa District	Regulatory Division					1645 S. 101 East Avenue		Tulsa	OK	74128-4609	918-669-7182
US Department of Agriculture	Natural Resources & Environmental Division	State Conservationist	Mr.	Ron	Hillard	100 USDA	Suite 206	Stillwater	OK	74074-2655	
US Fish and Wildlife Services	Division of Ecological Services	Field Supervisor	Mr.	Jerry	Brabander	9014 E. 21st Street		Tulsa	OK	74129	918-581-7458
USEPA-REGION 6 (6SF-LP) #1200	Community Action Board		Mr.	Michael	hebert	1445 Ross Avenue		Dallas	TX	75202-2733	
	Community Action Board			Betty	Reaties	425 Blue Spruce Drive		Midwest City	Ok	73130	

updated 2/22/20083:33 PM

acog

association of central oklahoma governments

February 7, 2008

72 CEG/CEAN
Attn: Ms. Cindy Garrett
7701 Arnold Street, Suite 204
Tinker Air Force Base, Oklahoma

Dear Ms. Garrett:

RE: ID#A23801 Department of the Air Force
Notification of Environmental Assessment, Construction of General Purpose Warehouse

The Association of Central Oklahoma Governments has completed its Regional Clearinghouse Review of the above referenced proposal recently submitted by your office. Any future communication regarding this proposal should be accompanied by the ID number listed above.

As a result of our review process and comments received, the process and comments received, the proposed project, as of this date, does not appear to be inconsistent with areawide goals and objectives.

Please notify this office of any subsequent modifications, supplements, or amendments to this proposal if such occurs. At that point we will conduct an additional regional review of the modified proposal as necessary. You are also requested to notify this office of the official action taken on this proposal by the agency from which you are requesting assistance.

Please be advised that this letter is not a commitment of funds for your proposal from any funding source, but allows you to proceed with your application for funding consideration.

We appreciate this opportunity for review and comment on your proposal.

Sincerely,

John G. Johnson
Interim Executive Director

21 E Main Street, Suite 100 Oklahoma City, OK 73104-2405 405 234 2264 FAX 234 2200 TTY 234 2217 www.acogok.org

U.S. Department of Homeland Security
FEMA Region 6
800 N. Loop 288
Denton, TX 76209-3698

FEMA

February 11, 2008

72 CEG/CEAN
Attn: Ms. Cindy Garrett
7701 Arnold Street, Suite 204
Tinker AFB, OK 73145-9005

Dear Ms. Garrett:

This will respond to Colonel Correll's letter dated January 23, 2008 (enclosed).

It was unclear as to the location of the project. There was no map pinpointing the location and it appears that Air Depot Road and 59th Street are perpendicular to each other. Also, is the location confined to an area inside the perimeter of Tinker AFB or is it located outside.

If the project is located within the perimeter of Tinker AFB, there are no local requirements you must meet. However, if the project is located within a Special Flood Hazard Area, as a federal agency you are required to meet the standards of EO 11988. Also, if this development is going to change the Special Flood Hazard Area, that extends past the perimeter of the fence, I would strongly encourage coordination of this project with the local community.

Flood Insurance Rate Maps are available on-line at http://msc.fema.gov.

If there are any questions, please feel free to contact me at the above address, or 940-898-5128, or carl.watts@dhs.gov.

Sincerely,

Carlton R. Watts
NFIP Specialist

OKLAHOMA

BRAD HENRY, GOVERNOR
GREG D. DUFFY, DIRECTOR

DEPARTMENT OF WILDLIFE CONSERVATION

P.O. Box 53465 Oklahoma City, OK 73152 PH. (405) 521-3851

February 19, 2008

72 CEG/CEAN
Attn: Cindy Garrett
7701 Arnold Street, Ste. 204
Tinker Air Force Base, OK 73145-9005

OBS Ref: 2008-104-FED-DOD
Re: Construction of General Purpose Warehouse at Tinker Air Force Base

Dear Ms. Garrett,

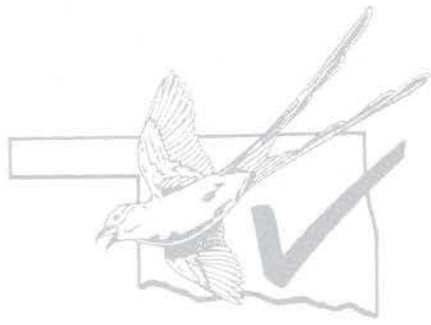
This letter is written in response to your request for information regarding the presence of endangered species and other elements of biological concern at the referenced site. We have reviewed the information currently in the Oklahoma Natural Heritage Inventory database and have found no records of elements of concern at the location you describe.

Because the ONHI database is only as complete as the information that has been collected, we cannot say with certainty whether or not a given site harbors rare species or ecological communities. For this reason, if you are concerned about species of federal interest, we urge you to consult with the Tulsa office of the U.S. Fish and Wildlife Service (918-581-7458), as they may have additional information of which we are unaware. However, based upon the currently available information, it is unlikely that threatened or endangered species occur in the vicinity of the project site.

The information we provide to you is a product of a cooperative agreement between the Oklahoma Biological Survey (OBS) and the Oklahoma Department of Wildlife Conservation (ODWC). If you have any questions, please contact me at ODWC (405-424-6062). You may also find the OBS web site helpful for expediting your information request. See http://www.biosurvey.ou.edu/fastforward.html.

Sincerely,

William Ray
Natural Resources Biologist



Oklahoma Archeological Survey
THE UNVERSITY OF OKLAHOMA

February 1, 2008

72 CEG/CEAN
Attn: Ms. Cindy Garrett
7701 Arnold Street, Ste. 204
Tinker Air Force Base Oklahoma

Re: Proposed construction of a General Purpose Warehouse & demolition of an existing concrete pad and asphalt parking lot at 59th and Air Depot. Oklahoma County, Oklahoma.

Dear Ms. Garrett:

We have received the referenced project for review, but find that additional information is necessary. We would prefer to receive the project location plotted on a USGS 7.5 topographic quadrangle map (or xerox copy). Alternatively, we could use a legal description given in quarters (1/4, ¼,1/4), Section, Township, and Range. Street addresses or lot and block descriptions are usually **not** helpful.

NOTE: Please mark the location of the project area on a USGS topo map and return to us for review.

Please contact this office at (405)325-7211 if you require additional information.

Sincerely,

Janna Gruber
Staff Archaeologist

Robert L. Brooks
State Archaeologist

:ls

111 E. Chesapeake, Room 102, Norman, Oklahoma 73019-5111 PHONE: (405) 325-7211 FAX: (405) 325-7604
A UNIT OF ARTS AND SCIENCES SERVING THE PEOPLE OF OKLAHOMA

DEPARTMENT OF THE AIR FORCE
72 AIR BASE WING (AFMC)
TINKER AIR FORCE BASE, OKLAHOMA

MEMORANDUM FOR OKLAHOMA ARCHEOLOGICAL SURVEY
ATTN: MR. ROBERT L. BROOKS
111 EAST CHESAPEAKE
NORMAN, OK 73019

FEB 25 2008

FROM: 72 CEG/CEAN
7701 Arnold Street Room 109
Tinker AFB, OK 73145-9100

SUBJECT: Prehistoric Resources Review of N1/2 NW1/4 Section 27 T11N R2W

1. Tinker AFB is requesting a review of prehistoric resources for the construction of a General Purpose Warehouse and demolition of an existing concrete pad & asphalt parking lot at 59th and Air Depot, Oklahoma County, Oklahoma. The land to be reviewed is the N1/2 NW1/4 Section 27 T11N R2W. According to the Oklahoma State Historic Preservation Office, a review focusing on prehistoric resources by the Oklahoma Archeological Survey is required as part of the Section 106 review process. The review will be incorporated into the Environmental Assessment for the Construction of the DLA Warehouse.

2. Enclosed is a USGS Topography Map indicating the site. For additional information, our point of contact is Mr. Tim Taylor at 739-7062.

TRUDI LOGAN, Chief
Environmental Engineering Operations Section
Environmental Management Division

Attachment: USGS Topography Map

OFFICIAL FILE COPY TAYLOR/CEAN/25 FEB08

Oklahoma Archeological Survey
THE UNIVERSITY OF OKLAHOMA

March 6, 2008

Mr. Tim Taylor
Department of the Air Force
72 Air Base Wing
7701 Arnold Street, Room 109
Tinker Air Force Base, Oklahoma 73145-9100

Re: Tinker Air Force Base proposed construction of a General Purpose Warehouse and demolition of an existing concrete and asphalt parking lot at 59th and Air Depot. Legal Description: N ½ NW ¼ Section 27 T11N R2W, Oklahoma County, Oklahoma. (Note: This letter replaces our previous letter dated 2/27/08)

Dear Mr. Taylor:

The Community Assistance Program staff of the Oklahoma Archeological Survey has reviewed the above referenced project in order to identify potential areas that may contain prehistoric or historic archaeological materials (historic properties). The location of your project has been crosschecked with the state site files containing approximately 18,000 archaeological sites that are currently recorded for the state of Oklahoma. No sites are listed as occurring within your project area, and based on the topographic and hydrologic setting; no archaeological materials are likely to be encountered. Thus an archaeological field inspection is not considered necessary. However, should construction activities expose buried archaeological materials such as chipped stone tools, pottery, bone, historic crockery, glass, metal items or building materials, this agency should be contacted immediately at (405) 325-7211. A member of our staff will be sent to evaluate the significance of these remains.

This environmental review and evaluation is performed in order to locate, record, and preserve Oklahoma's prehistoric and historic cultural heritage in cooperation with the State Historic Preservation Office, Oklahoma. Historical Society. In addition to our review comments, under 36CFR Part 800.3 you are reminded of your responsibility to consult with the appropriate Native American tribe/groups to identify any concerns they may have pertaining to this undertaking and potential impacts to properties of traditional and/or ceremonial value. Thank you.

Sincerely,

Janna Gruber
Staff Archaeologist

Robert L. Brooks
State Archaeologist

:ls

Cc: SHPO

111 E. Chesapeake, Room 102, Norman, Oklahoma 73019-5111 PHONE: (405) 325-7211 FAX: (405) 325-7604
A UNIT OF ARTS AND SCIENCES SERVING THE PEOPLE OF OKLAHOMA

Oklahoma Historical Society *Founded May 27, 1893*

State Historic Preservation Office
Oklahoma History Center • 2401 North Laird Ave. • Oklahoma City, OK 73105-7914
(405) 521-6249 • Fax (405) 522-0816 • www.okhistory.org/shpo/shpom.htm

February 25, 2008

Ms. Cindy Garrett
72 CEG/CEAN
7701 Arnold Street, Suite 204
Tinker AFB, OK 73145

RE: File 0895-08; Tinker AFB Proposed Construction of General Purpose Warehouse

Dear Ms. Garrett:

We have received the documentation submitted concerning the above referenced project in Oklahoma County.

We are unable to process your request for review at this time and ask that you supply a detailed map clearly showing the area of proposed ground disturbance and any existing structures on the site.

If you have questions regarding this request, you may reach me at 405/521-6381. Your response must reference the above underlined file number. Thank you.

Sincerely,

Charles S. Wallis

Charles Wallis, RPA
Historical Archaeologist

CW:bh

DEPARTMENT OF THE AIR FORCE
72 AIR BASE WING (AFMC)
TINKER AIR FORCE BASE, OKLAHOMA

MEMORANDUM FOR STATE HISTORIC PRESERVATION OFFICE
ATTN: MS MELVENA HEISCH
2401 NORTH LAIRD AVENUE
OKLAHOMA CITY, OK 73105

FEB 28 2008

FROM: 72 CEG/CEAN
7701 Arnold Street Room 109
Tinker AFB, OK 73145-9100

SUBJECT: Additional information for File# 0895-08, Tinker AFB proposed Construction of General Purpose Warehouse

1. Tinker AFB is submitting the additional information requested by your office to complete the review of the aforementioned project. Enclosed is a copy of a letter sent to the OAS dated 25 Feb 08 (atch. 1), a copy of a letter from the Oklahoma SHPO dated 12 April 1993 (atch. 2), a letter from the OAS dated 26 April 1993 (atch. 3), an aerial view from 2007 of the proposed site (atch. 4), a closer aerial view from 2007 of the proposed site (atch. 5), and a current map of the proposed site (atch. 6) for your review.

2. For additional information please contact Tim Taylor, 72 CEG/CEAN, at 739-7062.

SIGNED

CYNTHIA GARRETT, Acting Chief
Environmental Engineering Operations Section
Environmental Management Division

Attachments:
1. ltr. dated 25 Feb 08
2. SHPO ltr. dated 12 Apr 1993
3. OAS ltr. dated 26 Apr 1993
4. Aerial view 2007
5. Aerial view 2007
6. Map of Proposed Site

OFFICIAL FILE COPY TTAYLOR/CEAN/28FEB08

Oklahoma Historical Society *Founded May 27, 1893*

State Historic Preservation Office
Oklahoma History Center • 2401 North Laird Ave. • Oklahoma City, OK 73105-7914
(405) 521-6249 • Fax (405) 522-0816 • www.okhistory.org/shpo/shpom.htm

February 28, 2008

Ms. Cynthia Garrett
Acting Chief, Environmental Management Division
72 CDG/CEAN
7701 Arnold Street Room 109
Tinker AFB, OK 73145-9100

RE: File #0895-08; Tinker AFB Proposed Construction of General Purpose Warehouse

Dear Ms. Garrett:

We have received and reviewed the documentation concerning the referenced project in Oklahoma County. Additionally, we have examined the information contained in the Oklahoma Landmarks Inventory (OLI) files and other materials on historic resources available in our office. We find that there are no historic properties affected by the referenced project.

Thank you for the opportunity to comment on this project. We look forward to working with you in the future.

If you have any questions, please contact Charles Wallis, RPA, Historical Archaeologist, at 405/521-6381.

Should further correspondence pertaining to this project be necessary, the above underlined file number must be referenced. Thank you.

Sincerely,

Melvena Heisch
Deputy State Historic
Preservation Officer

MH:bh

Wednesday, April 9, 2008

Sam Noble museum to host family night out

NORMAN — The Sam Noble Oklahoma Museum of Natural History will offer an opportunity for families to get outdoors during "Family Night Out: Nature Game Night" from 6 to 8:30 p.m. Friday at the museum, 2401 Chautauqua Ave. The program will begin with games for children and parents, then everyone will go inside for dinner and a project where museum educators will help them design and create a family outdoor game to take home.

Cost is $10 per person. Children age 4 and younger are free. For more information, call 325-4712. Space is limited.

PUBLIC NOTICE

Tinker Air Force Base Invites Public Comment
Environmental Assessment
Proposed General Purpose Warehouse Construction

The United States Air Force and the Defense Logistics Agency have prepared an Environmental Assessment (EA) which is available for public review and comment.

Pursuant to the Council on Environmental Quality (CEQ) regulations and in accordance with the National Environmental Policy Act, an environmental assessment has been performed for the construction and operation of a 165,000 square foot General Purpose Warehouse proposed for the south side of Tinker Air Force Base.

No significant environmental impacts have been identified through the EA.

The public is invited to review the draft assessment and make comments. Written comments and questions can be submitted during a period of 30 days from the date of this notice.

The final draft for the Environment Assessment is available to the public at the Tinker Information Repository located in the Midwest City Public Library on Reno Avenue. Hours of operation are 9:00 a.m. to 9:00 p.m. Monday thru Thursday; 9:00 a.m. to 5:00 p.m., Friday and Saturday; and 1:00 to 5:00 p.m. on Sunday.

The public may submit written comments to the address below:

72nd Air Base Wing Public Affairs Office
Brion Ockenfels
7460 Arnold Ave., Suite 127
Tinker Air Force Base, Oklahoma 73145
Phone: 405-739-2027/26
E-mail: brion.ockenfels@tinker.af.mil

Civil

IN THE UNITED STATES BANKRUPTCY COURT FOR THE WESTERN DISTRICT OF OKLAHOMA
In Re
GUADALUPE JOSE TORRES
Debtor
CASE NO. 05-20634 NLJ
Chapter 13

GUADALUPE JOSE TORRES
Plaintiff
vs.
PAUL EDWARD CLARK
AMY MARIE CLARK
Defendant.
CASE NO. 05-20634 NLJ
ADV. NO. 06-1017 NLJ
NOTICE OF HEARING ON DAMAGES

COMES NOW Plaintiff and notifies all interested parties that a hearing on damages concerning Plaintiff's Complaint shall be heard on April 15, 2008, 9:30 a.m., in the second floor courtroom of Judge Niles Jackson, United States Bankruptcy Court, 215 Dean A. Mcgee, Oklahoma City, OK 73102. All interested parties must attend this hearing if any such party has an objection to the Court's entry of a money judgment against Defendants Paul Edward Clark and Amy Marie Clark.
Respectfully submitted,
S/ MIKE ROSE
Mike Rose, OBA No. 15523
MICHAEL J. ROSE, P.C.
4200 Perimeter Center Drive
Suite 245
Oklahoma City, OK 73112
(405) 605-3757 telephone
(405) 605-3758 facsimile
mrose@coxinet.net

IN THE UNITED STATES BANKRUPTCY COURT FOR THE WESTERN DISTRICT OF OKLAHOMA
In Re
GUADALUPE JOSE TORRES
Debtor
CASE NO. 05-20634 NLJ
Chapter 13

GUADALUPE JOSE TORRES
Plaintiff
vs.
PAUL EDWARD CLARK
AMY MARIE CLARK
Defendant.
CASE NO. 05-20634 NLJ
ADV. NO. 06-1017 NLJ
NOTICE OF HEARING ON APPLICATION FOR DEFAULT JUDGMENT

COMES NOW Plaintiff and notifies all interested parties that Plaintiff's Application for Default Judgment shall be heard on April 15, 2008, 9:30 a.m., in the second floor courtroom of Judge Niles Jackson, United States Bankruptcy Court, 215 Dean A. McGee, Oklahoma City, OK 73102. All interested parties must attend this hearing if any such party has an objection to Plaintiff's Application for Default Judgment.
Respectfully submitted,
S/ MIKE ROSE
Mike Rose, OBA No. 15523
MICHAEL J. ROSE, P.C.
4200 Perimeter Center Drive
Suite 245
Oklahoma City, OK 73112
(405) 605-3757 telephone
(405) 605-3758 facsimile
mrose@coxinet.net

Classads 475-3000

Corporation Commission

Notice
OKLAHOMA CORPORATION COMMISSION
Oil and Gas Conservation Division
Jim Thorpe Building
P.O. Box 52000
Oklahoma City, Oklahoma
P.D. NO. 200800125
STATE OF OKLAHOMA TO: All persons, owners, producers, operators, purchasers, and takers of oil and gas, and all other interested persons, particularly in Okmulgee County, Oklahoma:
NOTICE IS HEREBY GIVEN: That Billy C. Wasson, 18345 Hwy 52, Morris, Oklahoma 74445 is requesting that the Commission, pursuant to OCC-OGR Rules 165: 10-5-5-7-27 administratively authorize the approval of the injection of saltwater for enhanced recovery into a well as follows:
WELL NAME: Allison 1A, LOCATION: S 1/2 S 1/2 SW 1/4 NE 1/4, Section 1, T14-North, R 14-East, Okmulgee County, Oklahoma INJECTION ZONE: DUTCHER, SAND AND INTERVAL 1644 TO 1650, INJECTION PRESSURE AND RATE: 250 P.S.I., 150 Barrels per day.
OBJECTIONS may be filed with the Oklahoma Corporation Commission within fifteen (15) days after the publication of this notice. Objections, if any, should be mailed to Oil and Gas Conservation Division, Pollution Abatement Department, Jim Thorpe Building, P.O. Box 52000, Oklahoma City, Oklahoma 73152-2000.
/s/ Billy C. Wasson
18345 Hwy 52
Morris, Oklahoma 74445
405-325-3664

Public Notices

I, Kelly Phillips am working with the State Health Dept To license a ttatto shop, The Ink Stop Tattoos at 2900 N Classen Suite M OKC OK 73106 ph 405-557-1222 cell 405-220-6414

Title 42 Notice

Anyone having interest in 16' Camper Trailer from unit 220 at 2102 S Broadway Ave in Moore. OK tag VPZ278 Owned by late George Nichols of Moore, Last address 670 SW 11th. Shall be sold to highest bidder at noon on 4/17/08, 2102 S Broadway 426-9848

Notice of Sale

Will sell at public sale to highest bidder APRIL 16, 2008 11:00AM, CASH ONLY, at 1001 SW 19th St. Moore OK 73160:Unit#D20:Gabriel K Marshall, PO Box 7446 OKC OK 73153,Furniture, small refrigerator, weed eater, tvs, stereo, rug, misc items and boxes.

APPENDIX B

COMMENTS RECEIVED FROM IICEP/PUBLIC REVIEWS

APPENDIX B
LIST OF PERSONS CONTACTED

Albert T. Aguilar, 72 ABW/CEPR
Carmie Ashley, ABW/CEAR
Scott Bowen, ABW/CEPR
Keith Buehler, 72 CEG/CEAN
Bill Dalke, 72 CEG/CEA
Michael Dobbs, Defense Logistics Agency
Delayne Dye, DLA-DDOO-XA
Mel McFarland, OC-ALC-JAV
Cynthia Garrett, 72 ABW/CEAN
AJ Hudacko, OC-ALC/XPLC
John Krupovage, 72d ABW/CEVOE
Augustus Mays, DDOO
Ray Moody, 72 CEG/CEAN,
Lou Anna Munkres, 72 ABW/CECR
Diane Northcutt, DLA-DDOO
Brian Renaghan, AFCEE/EXA
Jim Rowden, 72 ABW/CEPE
John Schroder, CEVOE
Bill Stockdale, OC-ALC/XP
Tim Taylor, 72 CEG/CEAN

APPENDIX C

REFERENCES

APPENDIX C
REFERENCES

Bailey, Robert G. 1995. *Description of the Ecoregions of the United States,* United States Department of Agriculture, Forest Service Miscellaneous Publication, 1391, 108pp.

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Duck, L.G. and J.B. Fletcher. 1945. The Game Types of Oklahoma: Introduction IN: *A Survey of the Game and Fur-bearing Animals of Oklahoma*. State Bulletin No.3. Oklahoma Department of Wildlife Conservation, Oklahoma City.

Endriss, D.A., E.C. Hellgren, S.F.Fox, and R.W.Moody. 2004. *Movements and Demographic Characteristics of an Urban Population of the Texas Horned Lizard.* Oklahoma Academy of Science, Edmond, Oklahoma.

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